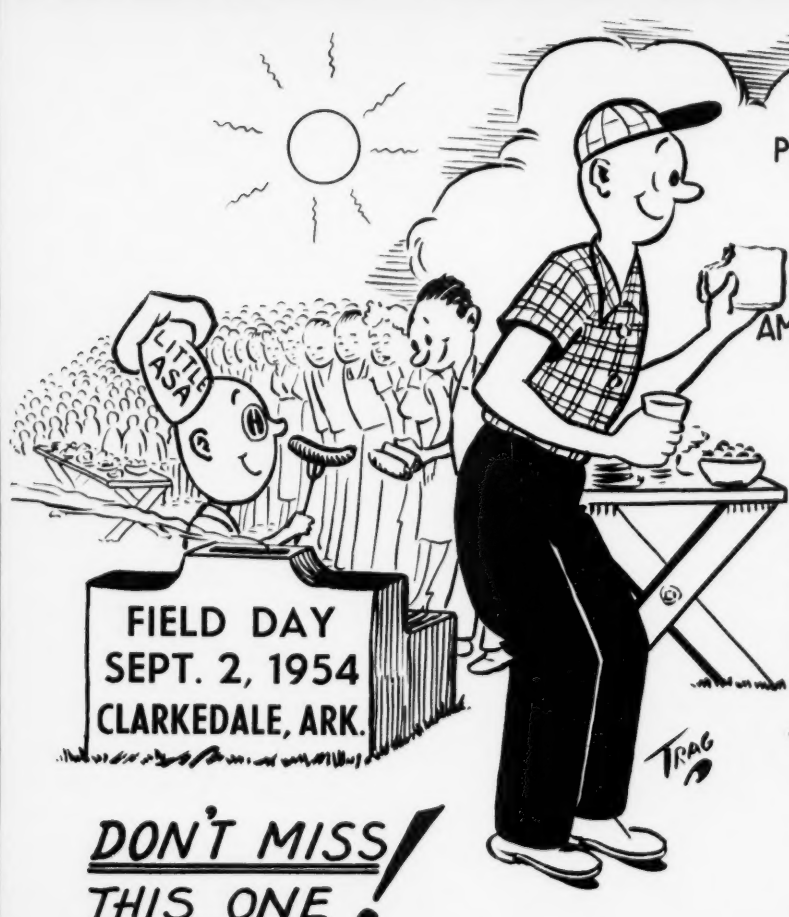


# THE Soybean Digest

OFFICIAL PUBLICATION • AMERICAN SOYBEAN ASSOCIATION



**JOINT MEETINGS**  
NATIONAL SOYBEAN  
PROCESSORS ASSOCIATION  
AUG. 30  
AND  
**34TH**  
ANNUAL CONVENTION  
AMERICAN SOYBEAN ASSOCIATION  
AUG. 31-SEPT. 2.  
HOTEL PEABODY  
MEMPHIS, TENN.

**FIELD DAY**  
SEPT. 2, 1954  
CLARKEDALE, ARK.

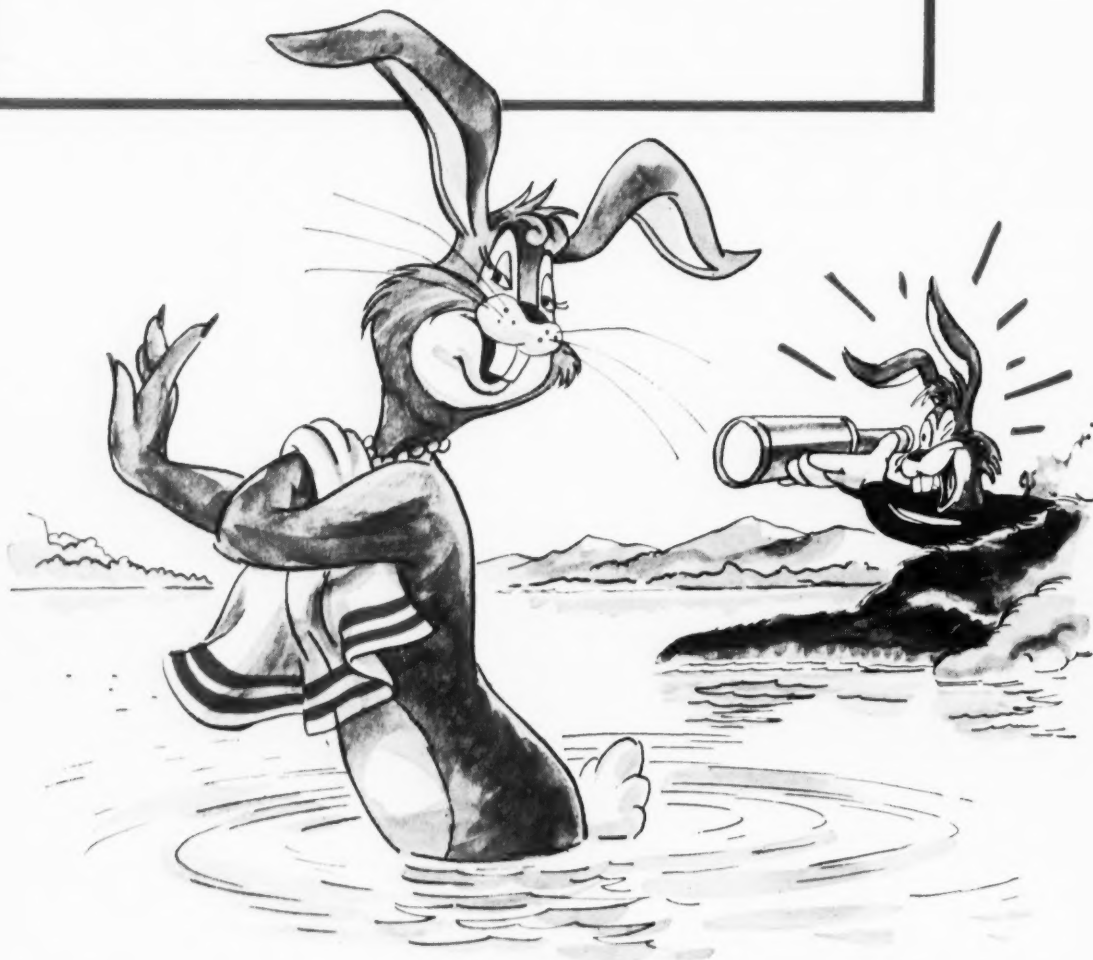
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AUGUST • 1954

VOLUME 14 • NUMBER 10

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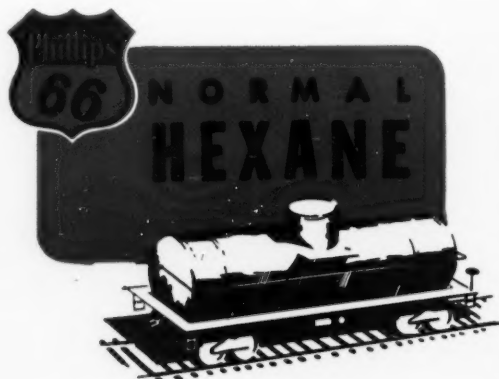


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# THE Soybean Digest

REG. U. S. PAT. OFF.

HUDSON, IOWA

Vol. 14 • August, 1954 • No. 10

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## THE SOYBEAN DIGEST

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• • •

## THE AMERICAN SOYBEAN ASSOCIATION

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Jake Hartz, Jr., Stuttgart, Ark.

### VICE PRESIDENT

Albert Dimond, Lovington, Ill.

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safe-guarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the industry.

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## REAL CHANCE TO BECOME ACQUAINTED

For the first time in history the annual meetings of the American Soybean Association and the National Soybean Processors Association will be held under the same roof and on consecutive days this year. We believe it is a step in the right direction. Certainly there are areas of action in which the two organizations, representing two segments of the industry, have identical interests. Neither the processor nor the grower can operate without the other.

We take this means of welcoming NSPA members to stay over for our ASA meetings. We hope you will take advantage of this opportunity to become personally acquainted with the leadership and the members of our organization.

When you become acquainted with the other fellow he usually turns out to be a pretty good sort of guy—probabilities are he does not wear the horns which you had pictured! His interests and yours may be divergent, but he is just as sincere in his beliefs and desires as are you. And when you understand those interests you nearly always agree that there is justification for that viewpoint, too!

If differences of opinion have been allowed to present themselves in our industry the probabilities are they are at least partially due to failure to sit down together and discuss our problems. Each group has gone merrily on its way, probably not making too much effort to see the other side of the picture.

We hope the processors of soybeans will not rush back to their offices and homes after Monday's sessions. We hope you will take the time to meet with us—talk with us—and understand our thinking and our actions. We welcome the opportunity to do so. While there will undoubtedly be important decisions awaiting you at your business, I doubt if there is any more important job at hand during the period Aug. 30-Sept. 2 than the re-establishment of the extremely important friendly relationships between processors, handlers and producers of the soybean crop.

Let's make a sincere effort—all of us—toward that end. We look forward to becoming better acquainted with you and your problems.

## THE TWO ARE LINKED TOGETHER

As an industry we must never forget that from the standpoint of both oil and meal the soybean industry is closely linked with the cottonseed industry in the United States. We compete for the same markets. We have the same customers. What affects one affects the other—they cannot be separated. Of course, one product may have slight advantage in one particular field, but the other probably counterbalances it in another field—so they average out.

Markets for soybean oil meal and soybean oil

have been good during the past year. They were not high enough during most of the year when viewed from the standpoint of the processor, but there was always a buyer at a price which was good as compared with competitive products. But they would have been better but for one factor.

Hanging over the market at all times have been the huge stocks of cottonseed oil owned by the Commodity Credit Corp. The refiner or the oil user has always known that he could go to CCC and buy any quantity of oil desired at a previously announced price. Competition for oil was at a minimum, and the government stocks served to establish the ceiling beyond which soybean oil prices could not move. Practically no stocks have been purchased from CCC by domestic users—they have bought what they wanted in the market place and the residue has gone into CCC stocks. The refiner and the user have carried no inventory—there has been no reason to do so when the government was already assuming that risk.

As a new cotton harvest season approaches the CCC owns over 700 million pounds of cottonseed oil. Primarily it is the problem of the cotton industry—and of CCC. But it is also our problem, for the prices paid for soybean oil will never be satisfactory so long as the long shadow of a year's supply of cottonseed oil hangs over the market! Soybean oil prices are being established by our major competitor. It will always be so, for the oils are so interchangeable that one will never move much above or below the other so long as adequate total supplies are available. The historical (recent years) premium commanded by cottonseed oil will never again be returned.

Cottonseed's problem is ours. We must recognize it. Plans now being made on cottonseed oil sales programs directly affect our industry.

## PUT MORE EMPHASIS ON PROTEIN?

For years the emphasis in soybean breeding work has been on the production of varieties with higher oil content. No new varieties have been released unless they were higher in oil content than the varieties then available in the area of adaptation. Even if yields were higher there has been no release because the emphasis—and rightly so—has been on oil.

To produce the tonnage of protein meals needed for America's livestock requires quantities of soybeans, cottonseed, peanuts and other crops which produce considerably greater quantities of edible oils than our nation is consuming today. We have a shortage of meals—and consequent high prices. We have a surplus of oils—and the resultant low price.

Neither product can be produced without the other. Without surpluses of edible oils we will

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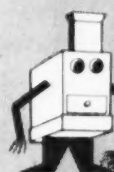
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have inadequate protein meal supplies. With adequate supplies of meal we have oil surpluses. Price materially affects the markets for protein meals. High prices stimulate substitution of synthetic products such as urea. Regardless of price the domestic market for edible fats and oils is relative inelastic—the consumer uses just about the same quantity each year. Gains come only through population increases. Losses come through substitute products, such as synthetic detergents, which force animal fats into edible fields.

Perhaps it is time to reappraise our soybean breeding programs and consider the advisability of shifting emphasis to protein and away from oil. If higher total yields are to be gained by doing so—and we have no knowledge of such—then certainly consideration should be given to such a shift.

So long as we strive to produce greater quantities of protein meals we will have with us the perpetual problem of edible oil surpluses. Any move to lessen them will be profitable.

**MUST TAKE ACTION ON GRADES** More and more groups are reaching the decision that changes must be made in our present soybean grading standards. Allowable foreign material is too great. Too much trash comes to market. It will continue to do so until

it becomes financially profitable to remove it. But until there is reason for returning the recleaners to combines they will stay in the sheds. Under all ordinary conditions it is possible, with proper operation, to market soybeans containing far less than the present allowable foreign material.

But until the processor and the exporter make it profitable to market clean beans they will not get them. A reduction in foreign material content allowed under the federal grades will be a step in the right direction.

The American Soybean Association on two occasions has requested such changes. But until soybean handlers—the men who have the most at stake in the current confusion—will recognize that right is right regardless of any immediate personal financial gain the change will not be made.

Steps toward the changing of grades in 1955 must be instituted soon. Consideration will be given at Memphis to the most desirable course of action. Every grower, handler, exporter and processor has a stake in any action taken. If you favor tighter standards and the resultant higher returns which will result then you should be ready to support action toward that end. It must come this fall. Watch for the decision. Be ready to actively support it.



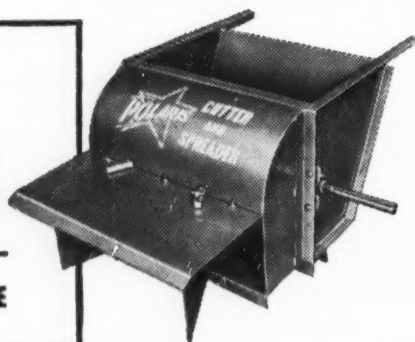
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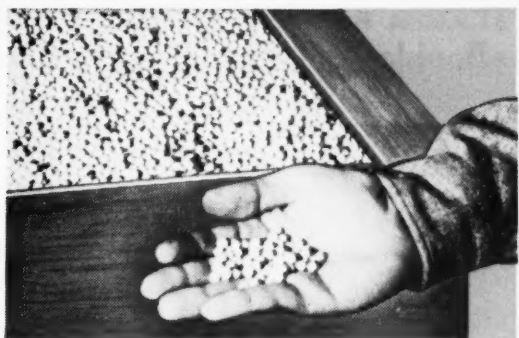
The Polaris Cutter and Spreader thoroughly processes the straw as it leaves the combine, by breaking up the straw bunches and cutting the straw into shorter lengths, then uniformly distributes the result over the stubble area while combining.

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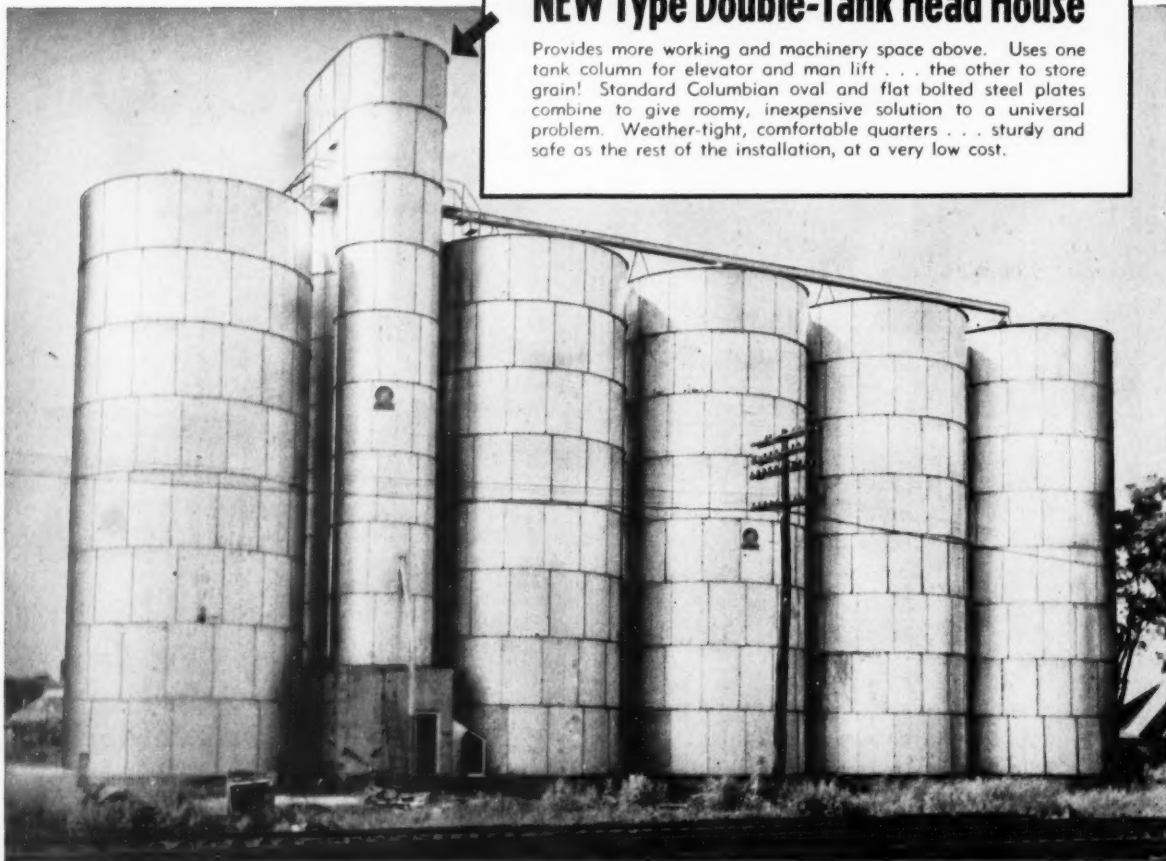
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# Late News

Published 32 times  
yearly as a service  
to the soybean  
industry.

## 1954 CROP OUTLOOK

Vol. 2, No. 12

Hudson, Iowa, Aug. 8, 1954

There was considerable relief from extreme heat, and beneficial rains—but not enough—fell over much of the soybean belt in late July. **Soybeans have been generally making good growth in the northern portions of the main soybean producing area but suffer from dryness and heat in most sections south of a line drawn through central Illinois.**

The more favored areas include the Dakotas, Minnesota, northern Iowa, northern Illinois, northern Indiana and Ohio. The yield outlook is average to above there, but yield could deteriorate with insufficient rainfall from now on.

It is pointed out that the current drought is one of the most extensive on record, extending from the Rockies to the East Coast, and its breakup is not in sight. **The pattern seldom changes from dry to wet on a large scale in midsummer. Still ahead, in August, is the period when the soybean crop usually deteriorates, as it did last summer.**

The Weather Bureau reports soybeans damaged heavily in Arkansas, as much by heat as by drought. Missouri is extremely hot and dry over the entire area, except for the Delta area where the outlook is fair. H. H. Huddleston, Lamont, Miss., says crop prospects have deteriorated in his area considerably in the last 30 days. Lack of general rains has caused many fields of soybeans either to burn up or be cut for hay. General rains are urgently needed in most of Mississippi.

Geo. K. Black, J. A. McCarty, Seed Co., Evansville, Ind., reports most of southwestern Indiana is beginning to show the effect of low moisture and the section is now very vulnerable. M. W. LeVier, Wichita, Kans., reports rainfall in eastern Kansas has been one-half normal since June and he expects the harvest to be very light. Many bean fields have been eaten by hoppers. Fred Hafner, General Mills, Inc., Minneapolis, Minn., says moisture reserves are dwindling but the yield outlook is still excellent. Glen Pogeler, North Iowa Cooperative Processing Association, Mason City, Iowa, says corn and soybeans never looked better in his section and the outlook is for a 25 to 28 bushel average.

R. R. Kalton, agronomy department, Iowa State College, places the state yield average at 20 to 21 bushels—the same as last year—if there is ample rainfall in the next few weeks. Without good rains the yield will decrease considerably.

## SOYBEAN STOCKS



The reason for the recent wild fluctuation in the bean market is the lack of a carryover to serve as a cushion, so the market is extremely sensitive to the slightest change in outlook. U. S. Department of Agriculture's stocks report shows soybean stocks in all positions July 1 totaled 33.2 million bushels compared to 62.3 million bushels a year ago. **Farm stocks are small and stocks at interior mills, elevators and warehouses are all at extremely low levels.** About 156 million bushels of the 263-million-bushel crop were processed through May 31 and about 37 million bushels were exported to July 1.

## CROP ESTIMATES

Leslie Commodity Letter for Aug. 1 estimates the 1954 soybean crop at 306.6 million bushels compared with earlier trade guesses of 340 or 350 million bushels and 263 million bushels in 1953. (C. M. Galvin estimated 345 million bushels July 1). **Leslie sees no carryover from the 1954 crop as he places requirements at 310 million bushels.**

## PESTS, DISEASES

Widespread damage by grasshoppers is reported in the soybean belt, including Illinois, Minnesota, southwestern Iowa, Kansas, Missouri and Arkansas. There is scattered infestation of bean leaf beetle in southeast Missouri and Arkansas. Army worms are a threat to soybeans in South Dakota. A light infestation of velvet bean caterpillars is reported in Plaquemine Parish, La.

There is some fusarium root rot damage in Iowa, according to J. M. Dunleavy and C. R. Weber of Iowa State College, who made a second extensive survey of the state's soybean crop in late July.

## WEEDS

Northeast and southwest Iowa have weedy areas, but 70 to 75 percent of the state's acreage is fairly clean, according to Dunleavy and Weber. Weeds are reported somewhat worse than normal in southwestern Ohio. **But most places weeds are giving little trouble** as they have been held back by drought. (For more complete earlier crop report see page 32.)

## OIL, MEAL DISPOSAL

Announcement of cottonseed oil and meal disposal policies for the new crop year starting Sept. 1 should be out soon. At meetings with industry groups last week, including ASA President Jake Hartz, Jr., and Secretary Geo. M. Strayer, it was indicated Commodity Credit Corp. would continue its domestic sales price at 15 cents a pound.

Also that meal taken in price support operations probably will be sold back to processors.

## EXPORT OUTLOOK

A number of European countries are ready to put in orders for U. S. soybeans as soon as the new export and surplus disposal program is set. France especially is a good potential customer.

Size of crop will have a lot to do with the amount exported: **It will take a really big crop to give the new soybean export program a real tryout.** Beans are a natural for this program. Foreign countries want our beans, especially if they can get some with their own currencies. Exports can be at least doubled with the aid of the new program—if the supply is available.

	Cash price to farmers for No. 1 soybeans July 30	Cash price to farmers for No. 2 soybeans July 30	Price to farmers for new crop soybeans July 30	Retail cash price for bagged soybean oil meal July 30
Ark. ....	\$3.00			
Ill. ....	3.49 @ \$3.65	\$3.51	\$2.75 @ \$2.82	\$100 @ \$108
Ind. ....	3.40			119
Iowa ....	3.40 @ 3.75		2.70	109 @ 115
Kans. ....		3.53		110
Minn. ....			2.64	103.50
Ohio ....	3.49		2.65	110
N. C. ....	2.40			90



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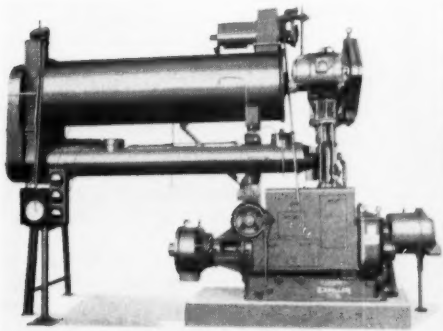
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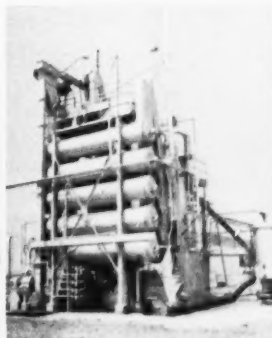
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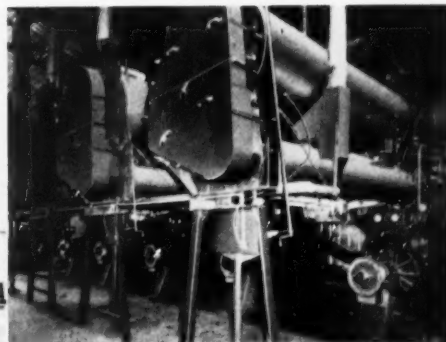
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Pres.  
Jake Hartz, Jr.  
Stuttgart, Ark.

## Welcome to the South

Soybeaners are in for a bang-up convention this year. Memphis, Tenn., has opened the city to us; and with the very capable assistance of the Memphis Board of Trade and our secretary, George Strayer, they have one of the finest programs both educational and entertaining we have ever had.

For the first time the National Soybean Processors Association will have their convention at the same location just preceding the growers' meeting. We are happy they will be with us.

Now "you all" pack up and come on down to Memphis Town. See you at the convention.

Jake Hartz, Jr., President  
AMERICAN SOYBEAN ASSOCIATION



THE PEABODY, the South's finest hotel where the combined soybean meetings will be held Aug. 30-Sept. 2.

## 34th Annual Convention

### PROGRAM

(Tentative and subject to change)

#### SUNDAY, AUG. 29

2:30 p. m.

Board of Directors meeting, American Soybean Association.

#### MONDAY, AUG. 30

9:00 a. m.

Exhibits open.

10:00 a. m.

Annual business meeting, National Soybean Processors Association.

1:00 p. m.

Trade and use promotion committee meeting, American Soybean Association.

Board of Directors meeting, American Soybean Association.

Annual business meeting, Mid-South Soybean and Grain Shippers Association.

Annual Business Meeting, National Soybean Processors Association.

#### TUESDAY, AUG. 31

##### Ballroom

9:30 a. m. Jake Hartz, Jr. presiding

President, American Soybean Association, Stuttgart, Ark.

Greetings from mayor of Memphis.

Greetings, President, Memphis Board of Trade.

"Research Work in Soybean Utilization by the U. S. Department of Agriculture," John C. Cowan, head, oil and protein division, Northern Regional Research Laboratory, Peoria, Ill.

"The World Fats and Oils Supplies," Paul C. Quintus, head, fats and oils division, Foreign Agricultural Service, U. S. Department of Agriculture, Washington, D. C.

"The Interdependence of the Cotton and Soybean Industries," William Rhea Blake, executive vice president, National Cotton Council of America, Memphis, Tenn.

"Soybean and Products Futures Markets," James F. Schonberg, assistant secretary, Uhlmann Grain Co., Chicago, Ill.

1:30 p. m. Albert Dimond presiding

Vice president, American Soybean Association, Lovington, Ill.

"Orderly Disposal of Governmental Edible Oil Supplies," J. E. Thigpen, director of oils and peanut division, Commodities Stabilization Service, U. S. Department of Agriculture, Washington, D. C.

"Surplus Butter Disposal and Its Effects on Soybean Oil Markets," S. F. Riepma, president, National Association of Margarine Manufacturers, Washington, D. C.

# American Soybean Association

## Annual Meeting National Soybean Processors Association

Hotel Peabody, Memphis, Tenn., Aug. 30-Sept. 2

"Let's Buy Soybeans on a Cleaned Basis," L. E. Kennedy, president, Kennedy's Grain Elevator, Newton, Ill.

"The Processors Look at Foreign Material," speaker to be announced.

"Problems of Handling Soybeans in a Port Elevator," A. A. Clarkson, manager, Public Grain Elevator, Port of New Orleans, New Orleans, La.

"Problems in Exporting Soybeans to World Markets," W. B. Fox, president, C. B. Fox & Co., New Orleans, La.

6:00 p. m.

Reception courtesy Memphis Board of Trade.

### WEDNESDAY, SEPT. 1

9:00 a. m. *Jake Hartz, Jr., presiding*  
Annual business meeting, American Soybean Association.

10:00 a. m. *Herbert Huddleston presiding*  
Director, American Soybean Association, Lamont, Miss.

"The Expanded Program of Varietal Development Work in Soybeans," Herbert W. Johnson, research agronomist, U. S. Department of Agriculture, Beltsville, Md.

"Problems Facing the Soybean Processor," W. E. Huge, vice president, Central Soya Co., Inc., Fort Wayne, Ind., and chairman, executive committee, National Soybean Processors Association.

"The World Fats and Oils Supply and Its Effect on U. S. Prices and Markets," speaker to be announced.

1:30 p. m. *Howard L. Roach presiding*  
Director, American Soybean Association, Plainfield, Iowa.

"The Status of Soybeans in 1955 Agricultural Programs," Marvin McLain, director, grain branch, Commodity Stabilization Service, U. S. Department of Agriculture, Washington, D. C.

"What Will We Get for 1954-Crop Soybeans?" Francis Kutish, department of agricultural economics, Iowa State College, Ames, Iowa.

"American Soybeans as Viewed by European Buyers," Geo. M. Strayer, secretary, American

Soybean Association, Hudson, Iowa.

"Producing Soybeans Under Irrigation," R. B. Oliver, Stuttgart, Ark.

"The New Varieties for the Southern States," E. E. Hartwig, agronomist, Delta Branch Experiment Station, Stoneville, Miss.

7:00 p. m.

Annual convention banquet.

Entertainment, courtesy Memphis Board of Trade.

Presentation of honorary life membership award.

Dancing, Peabody roof.

### THURSDAY, SEPT. 2

9:30 a. m.

Field trip to Clarkedale Station, Ark., to view varietal plantings, weed control experiments, tillage plots, etc.

## Midsouth Shippers To Meet at Memphis

The Midsouth Soybean and Grain Shippers Association will hold its first annual meeting at Hotel Peabody in Memphis, Tenn., Monday, Aug. 30, Paul C. Hughes, the chairman, Blytheville, Ark., has announced.

The shippers meeting will be held in conjunction with the annual convention of the American Soybean Association which follows in the Peabody Aug. 31-Sept. 2.



NSPA Pres. R. G. Houghtlin

## Greetings

I should like to join with President Hartz in urging all segments of the soybean industry to attend the meeting at Memphis. Processor attendance at our Aug. 30 annual meeting promises to be large and most of them will stay over to attend the sessions of the American Soybean Association.

This should provide a real opportunity for all segments of the industry to become better acquainted and to discuss mutual problems.

R. G. Houghtlin, President  
NATIONAL SOYBEAN  
PROCESSORS ASSOCIATION



MEMPHIS soybean processing plant of Swift & Co.

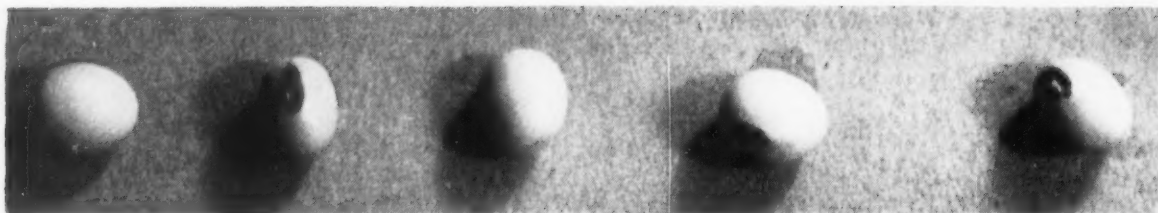


Figure 1. NORMAL, well-developed, uninjured soybean seed.

# SEED INJURY and SEED QUALITY

By JOSEPH E. BARNES  
Field Seed Division, Funk Bros. Seed Co.

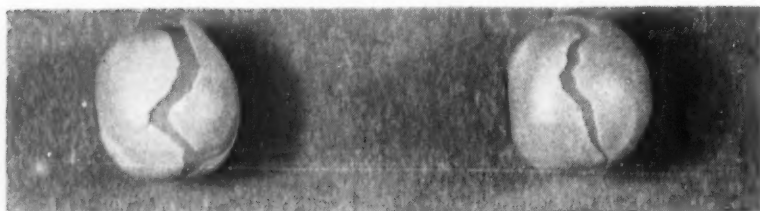


Figure 2. CRACKED seed coat, but with bean entire.

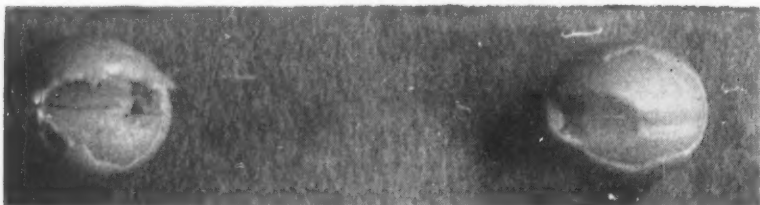
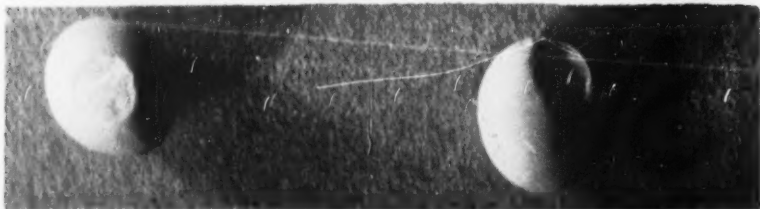
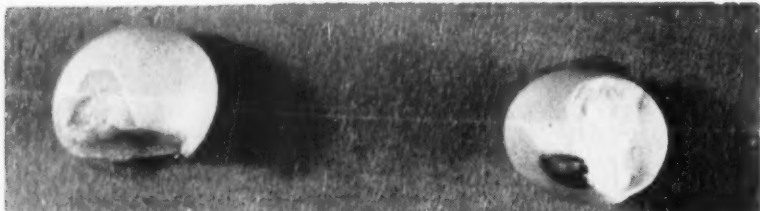


Figure 3. EMBRYO has been completely knocked out of bean.



Figures 4 and 5. FURTHER samples of mechanical injury.

**A**NOTHER SOYBEAN harvest will be with us in a few more weeks. Preparatory to this it might be well to review the harvests of the past two dry years to see if we may avoid some of the errors of harvesting and the consequent losses suffered in seed bean quality.

It is a matter of seed history that the seed beans used for planting the last two seasons were of inferior quality. This was particularly true of the viability of the seed. It was the exception this past season, as well as the year before, to find seed plots that carried a germination of 90 percent. Comparative data from testing agencies throughout the soybean belt showed an average for seed germination of 75 percent for 1954.

There are distinct reasons for this condition and it is hoped that a discussion of the casual factors may be of aid in the coming harvest.

## Drouth Big Factor

Drouth has been a major factor—at least in many instances it has been an underlying cause in that the finished end product, a mature soybean seed, has not been consummated. This is particularly true in regard to the size of the beans; many are small, unfinished and when tested for viability either they remain hard, give a weak sprout, or rot in the germinator.

Drouth has also been an underlying cause for susceptibility to mechanical damage. Beans were so dry last fall that many lots were coming directly from the combine to the seed house with 6-7 percent moisture. Concurrently the percentage of damaged beans rose proportionately.

Some of this damage could have been avoided by proper combine adjustments or by harvesting earlier in the day. The manufacturers of combines are aware of drouth harvest conditions and have built in proper mechanical adjustments to alleviate some of the damage. It remains with the combine operator to take advantage of these adjustments, as well as give some concern to the speed of travel through the field. Careful screening by good combine operators will disclose pos-

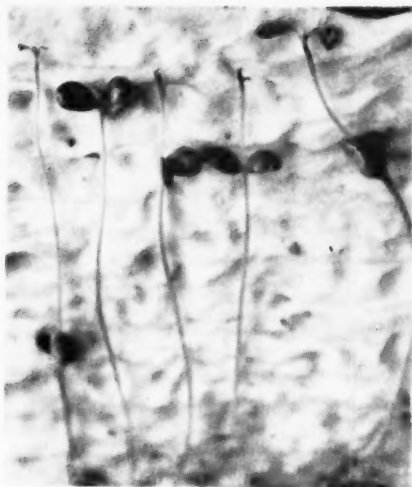


Figure 6. BALD HEADS, or snakehead sprouts shown by four seedlings at left.



Figure 7. SPROUTS at left resulted from injuries shown in Figures 2 and 3.



Figure 8. NORMAL growth from a sound mature bean shown at left. Middle sprout has no true leaves, and seedling at right shows root injury.

sible sources of sound and undamaged seed beans.

In the pictures accompanying this article, attempts were made to show mechanical injury at harvest and the ensuing results when such seed beans are tested for viability.

Figure 1 shows normal, well-developed, uninjured soybean seed. Such beans may be expected to produce normal seedlings and give a good field stand.

Figure 2 shows beans with the seed coat cracked, but with the bean entire within the coat. Such beans when tested or planted may give many different responses as following pictures indicate. Not much response can be expected, as such beans under test, or in soil, are susceptible to attack by seed-borne diseases and are, in general, of little value for seeding purposes.

Figure 3 shows complete and gross damage in that the germ or embryo has been completely knocked out of the bean. The casual observer does not see this injury but those who are concerned by it, the seed analyst and the seed buyer, have to be aware of it for in their tests for germination and dockage they can see no sprouts and they can see the loose germs in the bottom of their dockage sieves—resulting in poor testing beans and poor field stands.

Figures 4 and 5 illustrate further samples of mechanical injury at harvest—both of which contribute to weakened, diseased sprouts which cut the germination figure, reduce field stand, increase susceptibility to disease attack, and in general give unsatisfactory results.

#### Results Shown Above

The results of these types of mechanical injury are shown in Figures 6 and 7. On the right in these pic-

tures are shown normal sprouts which may be expected to produce a plant under field conditions.

In Figure 6 the four seedlings at the left show bald heads, or snakehead sprouts, resulting from injuries shown in Figures 2, 4 and 5. Under field conditions this type of sprout either dies or contributes little or nothing to the seed crop.

To the left in Figure 7 are shown types of sprouts resulting from injury shown in Figures 2 and 3. In many instances there is either no growth at all or the growth is so poor that the seedling never emerges above ground.

Figure 8 on the left shows normal growth from a sound mature bean. The middle sprout has no true leaves and will be arrested in development. The third seedling shows root injury and breakage that would prevent emergence in the field.

Thus, mechanical injury, due to improper combine adjustments, careless operation, followed by additional injury in processing and cleaning, gives rise to injury which results in poor seed quality.

It may be well to impress on seed bean producers that the definition of germination in soybeans is interpreted to mean "the emergence and development of all essential structures of a seedling so that it will develop a normal plant under field conditions." It does not mean "begin to grow."

#### To Avoid Damage

Keep in mind the following facts when harvesting soybeans this year—low germination in soybeans may be a seasonal affair and is caused by:

- 1—Extended drouth or excessive temperature.
- 2—Very low moisture content—6 to 7 percent when combined.

3—Careless and hasty combine operators.

4—Cylinder speed too fast.

5—Each additional mechanical operation adds and accumulates to the poor condition of the soybean.

6—Uninformed persons reading germination tests on EMERGENCE only.

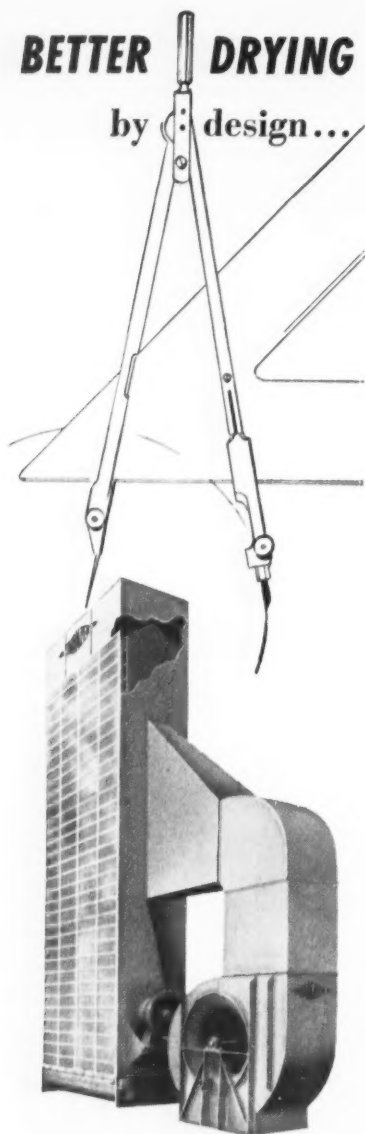
### You Can Attend Soy Festival on Way Home

AN INVITATION to people attending the joint meetings of the American Soybean Association and the National Soybean Processors Association at Memphis to take part also in the National Soybean Festival at Portageville, Mo., Sept. 1-5, has been issued by Joe DeLisle, the general chairman. Mr. DeLisle points out that the Festival will be on the direct route of many people returning home from the Memphis meetings.

The Festival's annual queen's beauty pageant will be held the afternoon of Sept. 5, the chairman says. The winner will not only be named Miss National Soybean Queen, but will be Miss Missouri as well and will receive a free two-week trip to California to take part in the Miss Universe Beauty Pageant to be held there in July 1955.

The selection of a junior king and queen, a kiddie's parade, float parade, carnival, exhibits and dance will fill out the five days of celebration.

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# DISEASES AND DISORDERS

## In Southwestern Ontario<sup>1</sup>

BY A. A. HILDEBRAND<sup>2</sup>

Science Service Laboratory,  
Harrow, Ontario

IN 1953, AS FOR some years previously, stem canker and manganese deficiency were two of the serious threats to the successful production of soybeans in southwestern Ontario. The incidence and severity of these two maladies center closely around certain characteristics of the soil, and the kind of weather that prevailed during the growing season in the area under consideration.

**Manganese Deficiency.** After subsiding slightly in 1951 and 1952, manganese deficiency in 1953 flared into unprecedented importance in most of Essex and in parts of Kent, the two most important soybean-producing counties. By July 1 the disorder was widespread, and the affected plants showed not only the typical foliar symptoms but also a disintegration and discoloration of the roots suggestive of a severe, root-rot type of injury.

It is known that the soils of Essex County are inherently deficient in manganese, and it is now recognized that the soybean is extremely sensitive to a lack of this element. According to information which has come to hand and which is shown graphically in Figure 1, manganese in the form that is available to plants is present in soils of Essex County

to the extent of only 49 parts per million, as compared with 199, 206, and 243 parts per million of the element in the available form in the soils of three other locations in Ontario.

The inherent deficiency of manganese in the soils, especially of Essex County, has been aggravated by a decreasing rainfall during the growing season for several successive years. Figure 2 shows that the average rainfall in the southern half of the county, an area of heavy production of soybeans, during the six-month period from Apr. 1 until Sept. 30, has declined from 17.5 inches in 1949 to 10.9 inches in 1953. As a result there has been a general lowering of the water table, and more recently rains, during the growing season, have been either too infrequent or of insufficient volume to dissolve and maintain continuously in solution an adequate supply of an important trace element like manganese. In 1953, only .87 inches of rain fell in south Essex during all of July. As a result the availability of manganese must have been seriously curtailed, and drought for this extended period may have been responsible for the marked accentuation of the disorder.

### Spraying on Manganese

Spraying is advocated as the "sure-fire" method for obtaining response to applications of manganese and should be carried out at the earliest indication of the occurrence of the disorder. From eight to ten pounds of a manganese-sulphate-containing

<sup>1</sup>Based on a talk given at the meetings of the fourth annual Ontario soybean convention, sponsored by the Ontario Soybean Growers' Marketing Board, in Chatham, Ontario, Feb. 16, 1954. Contribution No. 1385 from the Division of Botany and Plant Pathology, Science Service, Department of Agriculture, Ottawa, Canada.

<sup>2</sup>Senior plant pathologist.

COUNTY	AVAILABLE MANGANESE
ESSEX	49 P.P.M.
PR. EDWARD	199 P.P.M.
WATERLOO	206 P.P.M.
SIMCOE	243 P.P.M. (AV)
NORTH YORK	
PETERBORO	

COMPARISON between soils of Essex County and those of three other locations in Ontario with regard to available moisture.

SOYBEAN DIGEST

YEAR	JUNE 1-AUG 8	AUG 9-SEPT 4
1950	5.87*	2.40*
1951	5.85*	2.88*
1952	4.06*	.83*
1953	5.20*	.06*

COMPARATIVE summer rainfall in Essex County for past four years. Drought during most of August and early September 1953 modified severity of attack by stem canker.

1953	10.9*
1952	13.7*
1951	14.0*
1950	14.8*
1949	17.5*

DECLINE in average rainfall in Essex County from Apr. 1. to Sept. 30 during past five years.

chemical should be dissolved in 100 gallons of water and the solution should be applied at not much less than 50 gallons per acre.

**Stem Canker.** Stem canker was not as serious in Ontario in 1953 as in previous years. There are probably two main reasons for this. In the first place, the acreage of the two highly susceptible varieties Hawkeye and Blackhawk was greatly reduced, and in the second, the unusually hot dry weather of the last three weeks of August and the first week of September had an inhibiting effect on the progress of the disease.

#### Effect of Hot Weather

In Figure 3 it will be noted that from June 1 until Aug. 8, 1953, 5.20 inches of rain fell. Humidity of the sluggish air between the rows was apparently high enough to allow the fungus to infect and kill, as usual, great numbers of smaller spurs and leaf petioles lower down on the stems.

During the 26-day period from Aug. 9 until Sept. 4, however, only .06 inches of rain fell, and the temperature was unusually high. For the 10-day period, Aug. 26 until Sept. 4, the maximum temperature exceeded 90° F. every day. Under such adverse circumstances it was apparently impossible for the fungus to invade the plants through leaf scars higher on the stems, and thus

initiate the more serious girdling and killing phase of the disease.

Adverse weather conditions in 1953, however, may not prevent a carry-over of the disease in 1954. Stems of a number of susceptible varieties collected at random in the field in October 1953 were cut off at a point a little below ground level and were left to stand in shallow water in containers in the greenhouse. Typical spore-producing bodies of the fungus causing stem canker soon developed on the lower part of many of the stems. From the standpoint of disease control, these observations emphasize the advisability of avoiding the planting of soybeans after soybeans in a planned crop sequence.

### New Regulation Opens Way for New Foods

**H**OUSEWIVES will be encountering new, improved foods on their grocery shelves in the future as the result of changes in certain Food and Drug Administration regulations.

Under these new regulations the government will issue temporary permits allowing food processors to make market tests of new products which vary from official standards. This will open the way for food ingredients, such as soy flour, which are widely recognized for their nutritive properties to be permitted in

new combinations with other foods. This previously was barred in the case of many products because of no "historical record," it is pointed out by the Soya Food Research Council of Washington, D. C.

This means that a macaroni manufacturer who wants to improve the protein content of his product can now be permitted to add varying quantities of high protein soy flour to his macaroni mixture and sell it in test markets. He might make four different macaroni products, each having a separate percentage of soy flour such as 3 percent, 6 percent, 10 percent and 15 percent.

By evaluating the market reaction to his new products, the manufacturer would be able to tell which macaroni was most popular with the American housewife and her family. He could then select the favorite as his "final" product.

This offers the possibility of relaxation of the present rigid standards which require manufacturers to keep the soy flour content in macaroni in excess of 12 percent.

"This change in the Food and Drug regulations," says the Soya Council, "will permit food manufacturers to improve their products and at the same time get public reaction to those new foods. It will mean more competition for the housewife's food-dollar. It will mean better and healthier food for Americans."

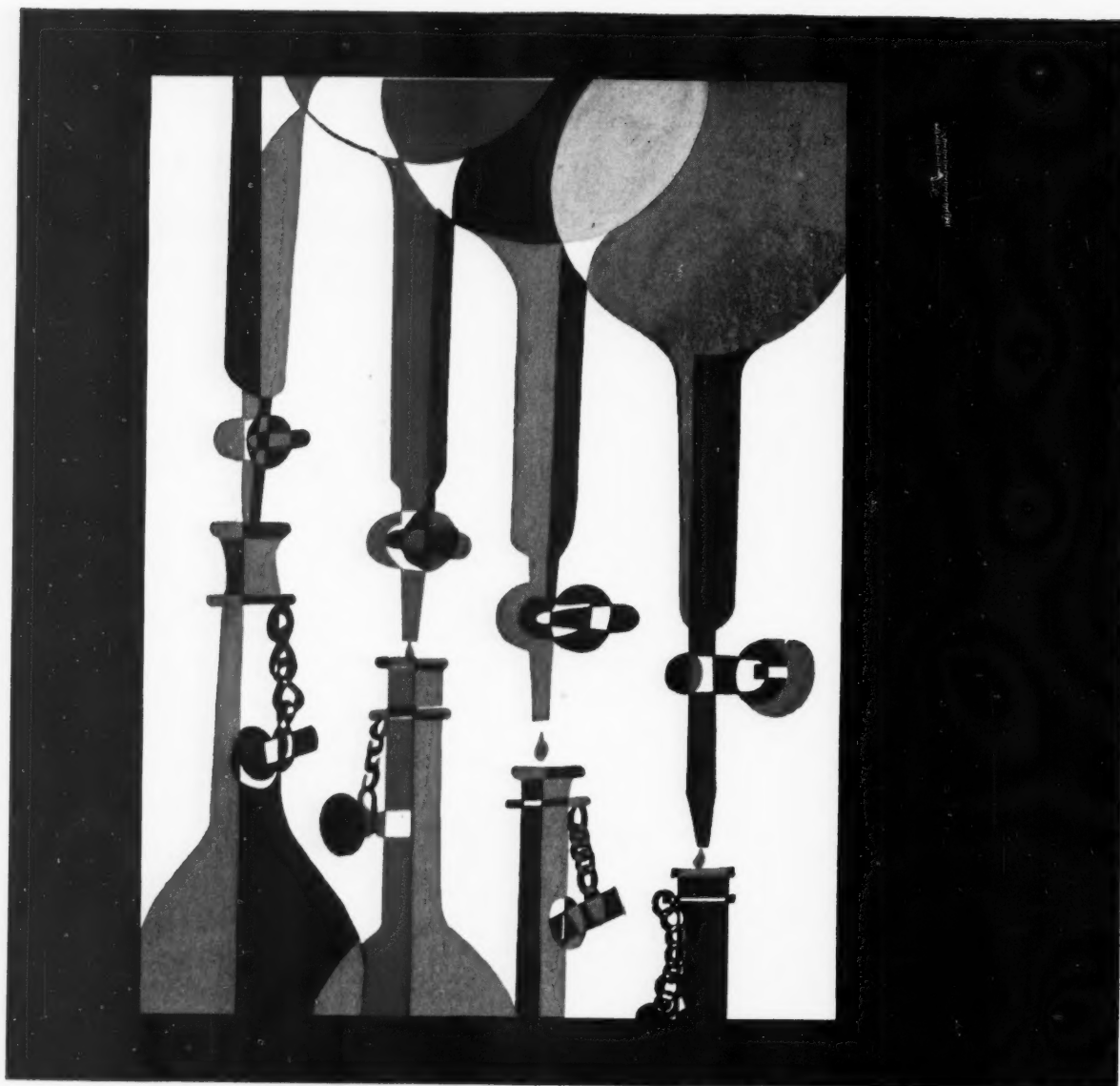
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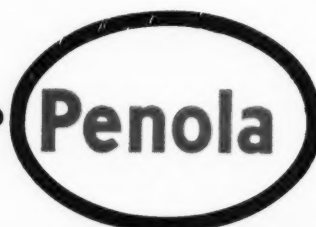
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# Growing Soybeans in Nebraska

Some of the rules  
apply elsewhere  
also

By DONALD G. HANWAY

Department of Agronomy, University of  
Nebraska

**S**UCCESSFUL production of any crop depends on accomplishing five things:

- 1—Choosing an adapted variety.
- 2—Planting enough good seed, properly distributed, at the right time.
- 3—Meeting the needs of the crop for water and fertility elements.
- 4—Preventing weed competition for water, nutrients and space.
- 5—Harvesting in a timely, careful way.

The variety that is best adapted in any area is the one that produces the greatest yield of high quality products per acre as an average for several years. In general, varieties that utilize the full growing season yield more than those that mature earlier.

How much seed is needed to plant each acre? The germination percentage, seed size, and distance between rows affect planting rates. Two bushels of viable seed are considered the most profitable rate for soybeans drilled solid. If rows are 40 inches apart, a viable seed per inch of row is the best recommendation. This is about one bushel of good seed per acre for most varieties. As rows are narrowed, the spacing in

the row should be changed little, if at all. Thus, more beans should be seeded on an acre basis. Spacing of plants in the row at maturity should be no more than two inches apart.

Close spacing of plants in the row results in (1) better emergence if the soil is crusted, (2) taller plants with fewer branches and pods farther from the ground, (3) more effective weed control in the row, and (4) adequate compensation for plants to be sacrificed during weed control operations. Some farmers are planting too much seed and getting small stems and excess lodging as a result, besides losing beans which might have been sold.

## Narrow Rows Best

Tests at Lincoln gave higher yields from 21-inch rows than from wider row spacings. This agrees with results from other Cornbelt states. In three tests under irrigation last year, however, 20- and 30-inch rows showed no advantage over 40-inch. Growth was excellent in these tests, and this demonstrates a rule that may well indicate whether a farmer can expect to gain by using narrower rows. The rule is that yield will increase as rows are narrowed until the leaves of plants in adjoining rows meet and completely shade the soil. If a short, early variety is being grown or the fertility level is such that vegetative growth is somewhat limited, row spacings as narrow as the available equipment will handle will usually result in higher yield.

Nebraska experiments indicate that time of planting for soybeans is not very critical. Planting in warm, moist soil results in rapid emergence. This is important because the beans get started ahead of the weeds and weed control is easier. Delay of one week in planting usually means not more than two days delay in maturity. Soybeans should ordinarily be planted as soon after May 20 as a firm, clean seedbed can be prepared. Recommended full-season varieties can be planted in any area up to June 10. For later planting the use of an earlier variety is recommended.

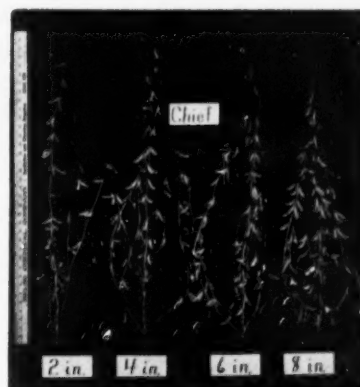
Plants, in general, have certain requirements that must be met before they can grow. If the environment in which they occur meets their requirements by supplying water, nitrogen, phosphorus, potassium, calcium and other elements in adequate amounts and proper balance, the plants respond by growing and producing high yields. Soybeans are no exception. Nearly all the soybeans in Nebraska were short of water at one time or another last summer. Many fields had excellent plant growth and a good pod set. Dry weather reduced the size of the seeds considerably and reduced yield accordingly. Areas of fields that col-

lected runoff from slopes had much better yields than drier locations. Soybeans, like corn and the other crops grown on Nebraska farms, give more per acre from contouring or any other practice that helps insure an adequate water supply. Steps that get water into the soil where it falls are steps toward depositing more money in the bank.

Soybeans are almost 40 percent protein or about 6 percent nitrogen. A 20-bushel yield removes about 70 pounds of nitrogen from an acre. Fortunately, if inoculated so that nodules form, a portion of this nitrogen is taken from the air. As a result the soil after soybean crop is removed contains more available nitrogen than if a non-legume crop were grown. Nitrogen fixation by legumes is usually less efficient in acid soils. Soil tests will indicate how much lime is needed for such soils. The lime should be applied several months before planting time because full benefit is not received until it has had time to react with the soil.

If soybeans germinate 80 percent or more, inoculate without chemical seed treatment and plant at a rate which will drop one viable seed per inch in the row. If germination is below 80 percent, treat the seed at least one day ahead of planting with one of the seed protectants. These will protect the seed from soil microorganisms while they germinate. These protectants, however, will kill the nodulating bacteria in the inoculant if in contact with them very long. Chemically-treated seed, therefore, should be inoculated in the field just before putting in the planter.

Should phosphorus, potassium, and other nutrients be applied in addition to nitrogen and lime? No general answer is possible. In tests soybeans have rarely responded to phosphate fertilizers. Most of our Nebraska soils are well supplied with potash.



**EFFECT** of different plant spacing in the row on branching and height of lowest pods. Rows were 38 inches apart. Selection from Chief is shown.

YIELDS OF SOYBEANS IN ROWS OF DIFFERENT WIDTH	
Row spacing (Inches)	Yield (Bu./A.)
42	17.2
35	18.3
28	18.6
21	20.8

If each farmer has a rotation including legumes grown on limed and phosphated soil and is applying manure and commercial fertilizer to his corn, wheat, and other crops as needed to produce high yields, he will get good yields of soybeans if he does nothing more than inoculate them. If his general yield level is low, he should get his soil tested and fertilize crops in accordance with their specific needs and ability to respond.

Weed control is one of the biggest problems in soybean production. Occasionally a long rainy period will

prevent timely tillage operations and weeds become well established. Under most conditions, however, a farmer can achieve weed control if he will do the following:

1—Prepare the seedbed early and kill two or three crops of weeds before planting, the last one by a shallow tillage operation just before planting.

2—Surface plant at the recommended rate or put in very shallow furrows.

3—Plant in a warm soil so emergence will be rapid.

4—Plant in rows unless certain

of ability to keep drilled beans free of weeds.

5—Use a rotary hoe or spike-tooth harrow just before the beans come up and each time that a new crop of weeds germinates until the beans are six to eight inches tall.

6—One or two shallow cultivations should complete the weed control operations.

The spiketooth harrow and rotary hoe are ideal implements for weed control operations in soybeans because they allow timely and rapid coverage of a large acreage. These operations should kill the weeds as they germinate and before they are well established. They must be severe enough to take out a few percent of the beans or weeds will be left. Fewer beans will be broken if this work is done on a bright afternoon when the beans are less brittle.

## IDEAL FOR SOYBEANS

### HESSTON COMBINE STRAW CHOPPER

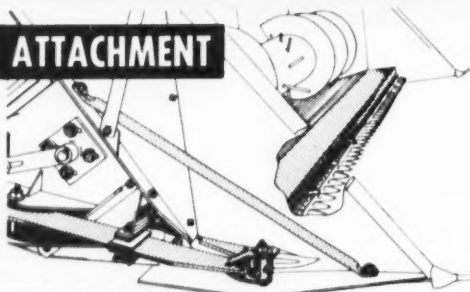
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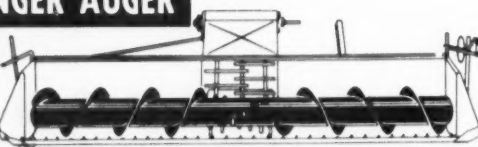
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## Chemical Control

Many chemicals have been tested for pre-emergence treatment of soybean fields to control weeds. Excellent results have been achieved when conditions were right. Chemicals that kill weeds, however, can also kill soybeans. As yet considerable risk is involved in their use and they are quite expensive. A product known as Premerge has given promising results in Nebraska tests, but control by tillage is still the recommended procedure.

The efficiency of the harvest operation is affected by every operation that precedes it. Seedbed preparation and weed control operations largely determine the number of weeds present to interfere with combining. The method and rate of seeding are directly related to the height of the lowest pods above the ground. If the cultivator throws a ridge up next to the row, the cutter bar must be carried higher and more beans will be left in the field. An ideal field for combining would be perfectly level.

Losses of 15 to 20 percent while harvesting are rather common. This is too great.

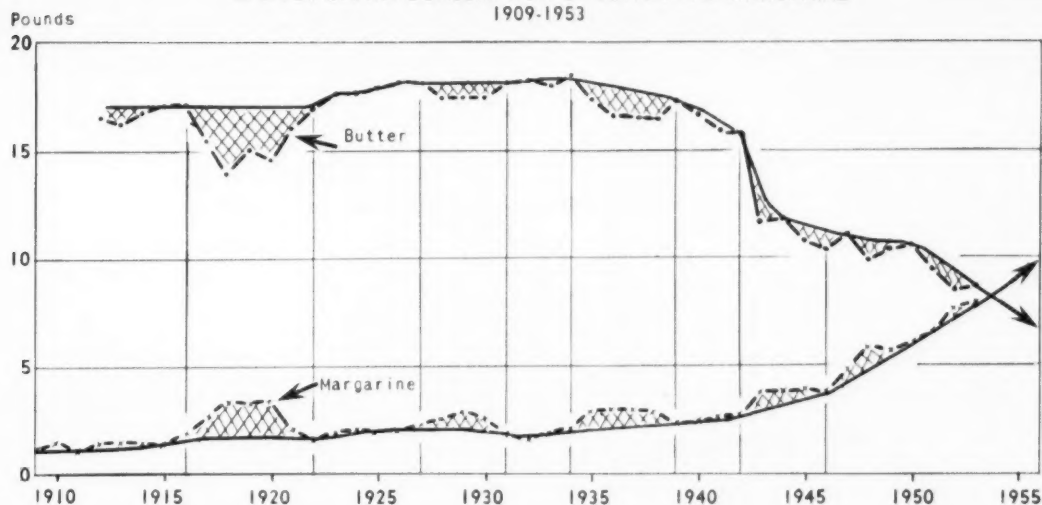
## To Wurster & Sanger

Angelo V. Graci, Jr., one of the inventors of the filtration-extraction method of solvent extraction and formerly of the Southern Regional Research Laboratory at New Orleans, is now associated as a project engineer with Wurster & Sanger, Inc., chemical engineers, Chicago, Ill., the firm announces.



Angelo V. Graci

U. S. PER CAPITA CONSUMPTION OF BUTTER AND MARGARINE  
1909-1953



## THE LONG AND SHORT TIME INTERPLAY BETWEEN

# Margarine and Butter Consumption

By LOUIS H. BEAN

**H**AVE YOU studied the long and short time interplay between margarine and butter as the chart permits you to do?

The charted record shows U. S. per capita consumption of margarine and butter. I have emphasized the variation in each by showing the short time movements of margarine consumption **above** its minimum trend and of butter, **below** its maximum trend.

Between 1910 and 1935 margarine consumption came up slowly and this uptrend did not cut into butter consumption perceptibly. There were three short-run experiences, how-

ever, when margarine did take up the slack in butter consumption temporarily: 1916-1920, 1927-1930 and 1934-1938.

Butter may be said to be a war casualty. Note how, in 1943, rationing or something cut consumption sharply all in one year, a vertical drop of four pounds, or 25 percent. Margarine took up only one pound of that drop.

Then came the speeded up post-war advance in margarine consumption between 1946 and 1950, with butter consumption remaining practically unchanged. Since 1950, butter consumption has gone down as

margarine consumption has continued its postwar advance.

As of 1953, the outlook seemed to be that butter would continue to head downward toward six pounds per capita (it was already down to 8.7 in 1953) while margarine, having reached 7.9 pounds per capita in 1953, was heading toward 10 pounds.

It may be very interesting to compare the 1954 and 1955 consumption of both butter and margarine to see whether government operations, in disposing of butter stocks and in cottonseed and soybean price support programs, will alter these trends and prospects.

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# Soybean Oil Mill Conference

Papers presented at the seventh annual

conference of soybean oil mills

at Mason City, Iowa

## The Toxicity of Trichloroethylene-Extracted Soybean Oil Meal (TESOM)

BY L. L. McKINNEY

WHEREVER controlled feeding tests have been conducted on TESOM, it has proved to be toxic to cattle. On the other hand, no evidence of toxicity has been obtained where cattle have been fed hexane-extracted SBM, even after the consumption of 6,000 pounds per animal over a period of 600 days. The toxic principle is transferred to the fetus, and calves or lambs may often be affected. Adequately supplemented feeding experiments indicate that avitaminoses and nutritional deficiencies are probably not involved. Lowered growth response has been demonstrated when TESOM was substituted for hexane-extracted soybean oil meal in chick and swine diets. Whether these results stem from reduced protein value or toxicity, or from both, remains to be seen.

The amount of residual solvent in the meal does not correlate with the degree of toxicity of the meal on feeding to cattle and trichloroethylene per se does not appear to be the source of toxicity. Neither impurities nor the oxidation inhibitor in new extraction grade trichloroethylene appear to be the source of toxicity, and limited experiments have failed to incriminate the autoxidation products of trichloroethylene. New beans appear to give a more toxic meal than do beans that have been stored through the winter.

The evidence to date indicates that the toxicity involves either the protein or some minor component in the soybean which changes on aging, or perhaps with heat treatment, in such a manner as to produce less of the toxic principle on extraction with trichloroethylene. The use of heat in the presence of moisture and trichloroethylene is common to all extraction plants that have produced toxic TESOM. Whether the toxicity is characteristic of trichloroethylene or is general for this type of solvent, whether it is characteristic of soybeans or is general for oilseeds or even proteinaceous materials, or whether it is dependent upon the process, are pertinent to the future development of extraction processes.

## Color Characteristics and Chemical Analyses of Oil From Frost—and Weather-Damaged Soybeans

BY DUNCAN MACMILLAN

THIS is an extension of earlier work on the green grading of crude soybean oil. The paper presented at last year's meeting was, in a sense, a study of maturity series. Most of the soybeans used in that work were from one planting of a single variety. They were harvested at several stages of maturity and artificially frosted. Thus, they showed only green damage.

To extend the work and make it more generally applicable, naturally-frosted and weather-damaged soybeans and green oils were obtained from cooperative and other mills. The oils from these beans were extracted with trichloroethylene.

Because the previous study was based on a definite series, the analytical data showed very regular trends as functions of ripeness of the beans. Refining loss, free fatty acid, and color decreased markedly with maturity while iodine value increased. In the work reported this

year, the same trends were noticeable but not with the same regularity. This is not surprising because the samples were obtained at random, and there were varying amounts of weather damage added to the frost damage. More noticeable this year than last was the high refining loss of oil from weather-damaged beans. The worst was as high as 39 percent loss.

Weathering also produced unusual responses to the bleaching of refined oil. In some instances there was little or no difference in color of oil whether a neutral or activated bleaching earth was used. In other cases, the difference in color between the 'wo bleaches was more than would be expected for "normal" oils. Thus, the bleach test on these abnormal oils is not a reliable guide to subsequent treatment in the plant.

It is of interest that only two green oils in the entire investigation would be subject to the green grade penalty.

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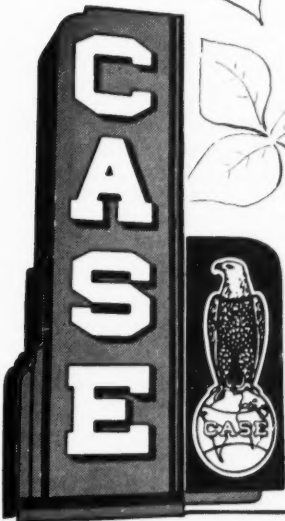
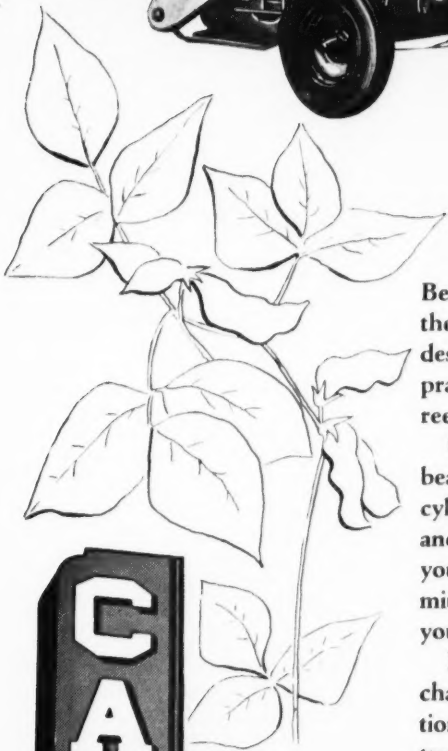
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## Effect of Agitation on Stability of Hydrogenated Soybean Oil

BY E. B. LANCASTER

WHEN refined soybean oil and hydrogen gas are brought together at an elevated temperature in the presence of a reduced nickel catalyst they combine to give hydrogenated soybean oil. Agitation is required to keep the catalyst suspended in the oil and to facilitate contact between the oil and gas. The character of the agitation, as well as other factors such as temperature and pressure, has an important effect on the properties of the hydrogenated oil.

The result of combining hydrogen with the oil is to increase the melting temperature, firmness and stability of the oil. During the hydrogenation of soybean oil any and all of the unsaturated acids may be reduced. The reduction of the mono-unsaturated fatty acid increases the hardness of the product, whereas reduction of the tri- and diunsaturated acids, and particularly of the triunsaturated acid, increases the stability of the product. However, the reaction is discontinued

before the oil has become completely hydrogenated, so that the melting point and firmness will not be increased beyond that which is required for a suitable margarine oil or a suitable shortening.

Hydrogenated oil for use in margarine must have a melting point of about 98° F. so that it will melt in the mouth when it is eaten. The melting point of shortening is usually somewhat higher. Margarine and shortening should also have suitable consistencies for spreadability or workability.

The stability of hydrogenated soybean oil is important to the consumer when it is used in shortening and margarine for prepared baked and fried foods. The length of time these products, or foods made therefrom, may be kept on the grocer's shelf before they become rancid or otherwise poor flavored is usually related to the stability of the oil.

Conditions for hydrogenating the oil which favors a high stability are termed selective conditions. It is obvious that a high degree of selec-

tivity during the hydrogenation reaction is desirable. In other words, before the limiting hardness is attained, it is desirable to have reduced relatively large proportions of the tri- and diunsaturated acids. Experiments were conducted in the pilot plant to find the most selective type of agitation.

In attempting to conduct hydrogenation in a more selective manner it was found that the use of an agitator of new design gave a product with enhanced stability. The agitator draws hydrogen gas from the headspace above the oil in the hydrogenator and disperses it in the oil in the form of small bubbles. This type of gas dispersion agitator produces a more stable hydrogenated oil apparently because the oil is kept more nearly saturated with hydrogen gas during the reaction.

## Urease Tests On Soybeans

BY A. K. SMITH

THE IMPORTANCE of cooking or toasting soybean oil meal to attain maximum nutritional value and the need for laboratory tests rather than time-consuming animal feeding tests for control of this operation were discussed. The moisture content of the meal as well as the time and temperature of toasting are the important factors in efficient toasting.

There are a number of publications describing laboratory investigations on toasting in relation to nutritional value, but because of the wide differences between laboratory and plant operation these laboratory results cannot be translated with assurance to large-scale operation.

A number of different laboratory tests have been proposed and tried as a means of processing control; the two which have been used most are the nitrogen solubility tests or, as it is now known, nitrogen solubility index (NSI), and the urease test. Several different methods for each of these tests have been investigated to find the most dependable one. The need for determining the compatibility of soybean oil meal with urea was also discussed.

The modified Caskey-Knapp, the Hafner, and Du Pont methods for determining urease in soybean oil meal were described and demonstrations of two of these methods were given. Although these methods fall short of the ultimate objective required for good quality control, they are very useful in plant operation.

Research is still in progress at the Northern Utilization Research Branch on processing control methods which will make possible a uniform, high quality product throughout the processing industry.

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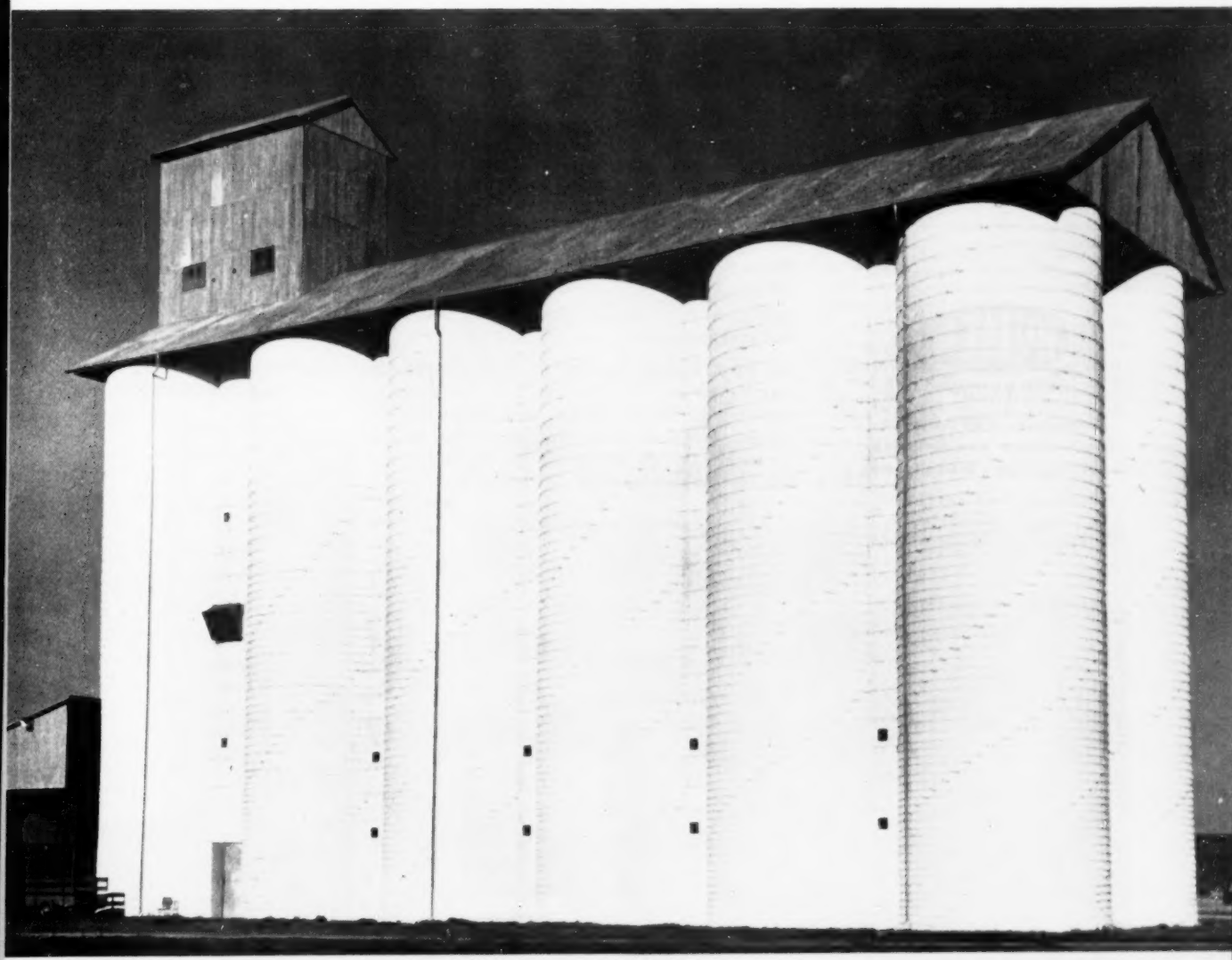




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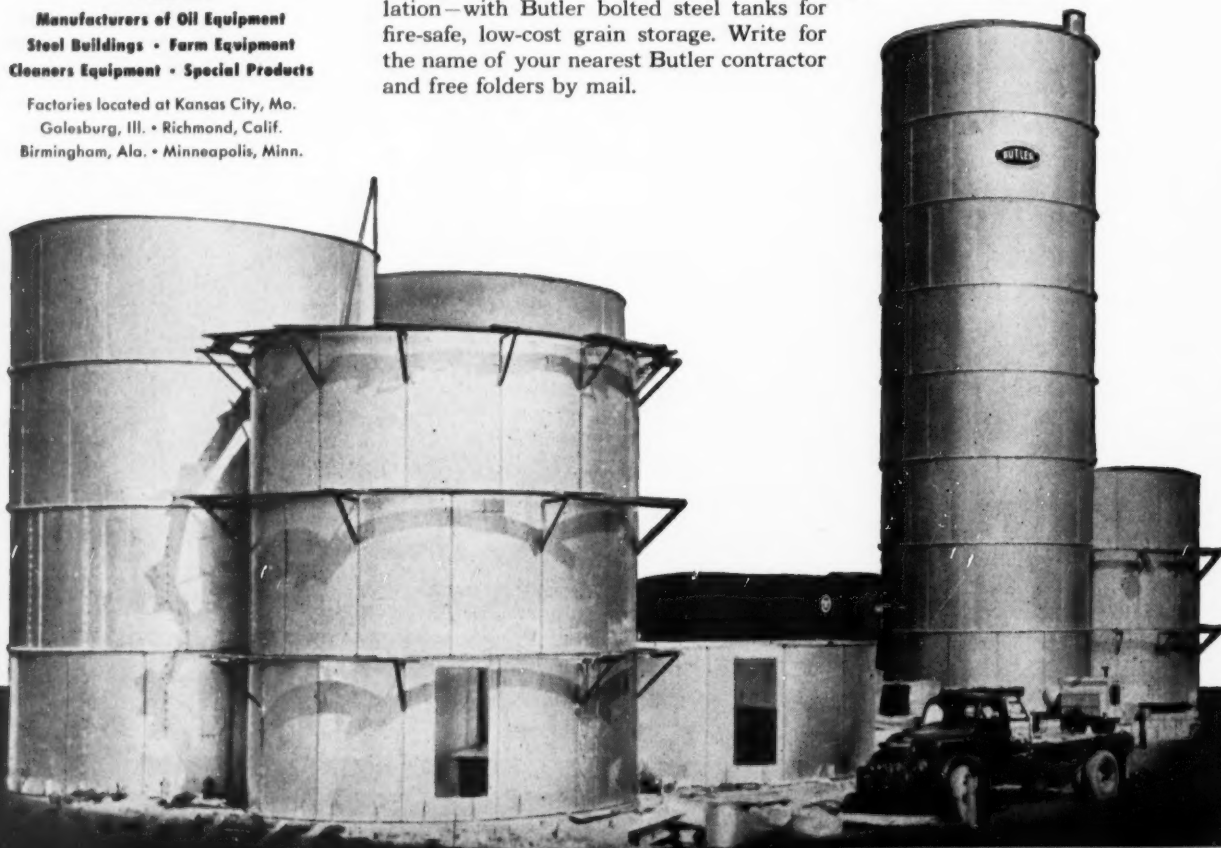
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AUGUST, 1954

## MILL CONFERENCE PAPERS—(Continued)

### Color of Soybean Lecithin in Relation to Processing Conditions

BY H. J. DUTTON

**T**HE production and utilization of soybean phosphatides has been increasing over the past several years. Approximately 50 million pounds of soybean phosphatides are potentially available, but only 20 million are being produced and sold. One factor which limits their utilization is the brown color which is formed during the processing of the oil and isolation of the gums. At the present time phosphatides are selling at approximately oil prices while the bleached phosphatides are selling at a slightly higher price. However, purified phosphatides are selling at \$7 a pound for pharmaceutical uses. These phosphatides are valuable as emulsifying agents, additives to food for nutritional improvement, and therapeutic agents.

The color of soybean lecithin is due to carotenoids, brown pigments, and occasionally porphyrins. In water-washing of crude oil, xanthophylls are preferentially removed with the gums, and carotene is practically absent in lecithin. Lutein is the principal carotenoid, comprising about three-quarters of the carotenoids in lecithin. Hydrogen peroxide bleaching destroys all the color to some extent, but by far the greater effect is on the carotenoids.

The brown color is very likely an

aldehyde amine reaction product. It is largely formed by heating of the oil during the solvent-stripping operation. It is not increased by drying the gums under vacuum for three hours at 80° C., but it is increased on heating at 100° C. under the same conditions. The formation of the brown color is not prevented by removal of free sugars or by hydrogenation of the lecithin.

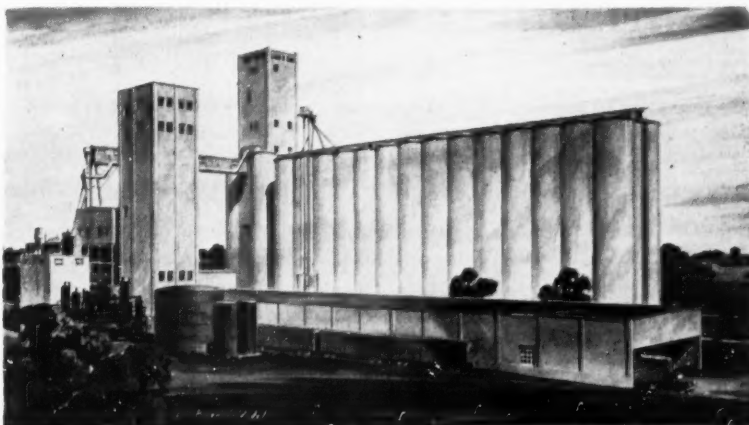
Future work on the color and browning in soybean phosphatides will include studies on the analytical relation of fluorescence of the oil and phosphatides to the development of brown color. An attempt will be made to develop a simple fluorescence test which will measure the extent of browning and heat damage during the various steps of processing.

### Fishin' With Soy

R. H. Jones, the fisherman at Williamsburg, Va., is "in dire need of soybean cake for fish bait." Not much, he wrote the National Soybean Processors Association, but in hard cake form. His old supplier closed down.

"When the cake is pressed hard it will stay in the nets and not come to pieces," he says. "At this season of the year soybean oilcake is the only thing we can catch fish with."

### Dannen Plant Will Look Like This



**DÄNNEN MILLS** plant south of St. Joseph, Mo., will look like this architect's drawing after its completion Oct. 1. Tall building at left is the new \$800,000 feed mill built to replace one destroyed by fire in November 1953. Long structure in foreground is a new warehouse, complete with enclosed truck loading dock and now nearing completion. To the right is Dannen's 1-million-bushel terminal elevator. Jones-Hettelsater, Kansas City, are engineers, designers and basic contractors for the new structures.



Keator McCubbin

## A New Fatty Alcohol Process by Blaw-Knox

THE return from Europe of Keator McCubbin, manager of the Midwest headquarters of the Blaw-Knox chemical plants division, marks the introduction of a new fatty alcohol process to American industry.

This is the modern SBA\* process for producing fatty alcohol by continuous hydrogenation. Blaw-Knox Co. will serve as exclusive licensing agent in the U. S. and will erect complete plants embodying this process.

Mr. McCubbin devoted much of

his recent trip to a study of developments in fatty alcohol processing. The Belgian SBA method was selected as the one best suited to economic application in America.

Moreover, Mr. McCubbin said, the SBA technique, alone among the modern methods studied, has a well worked out pilot plant that is available for the testing of raw feed materials of domestic origin.

The SBA process consists of the following steps:

1—Continuous methyl ester production.

a—Transesterification.

b—Fat splitting followed by esterification.

2—Continuous hydrogenation of the carboxy group.

3—Continuous hydrogenation of the unsaturation existing in the raw material.

4—Continuous fractional distillation of the crude alcohol.

The high molecular weight straight chain fatty alcohols have unusual surface activity and the sulfate derivative is used substantially in household detergents. Those from coconut oil are used in relatively higher-priced consumer goods such as shampoos, dishwashing compounds, and in various cosmetics as emollients. Tallow fatty alcohol sulfates are used in lower cost higher volume household detergents, such as laundry soaps and rug cleaning compounds.

The industrial uses of products derived from fatty alcohols represent another growing market. Some of these uses are: as anti-static rinse solutions in the textile industry; for plasticizers and stabilizers for vinyl plastics; as detergent additives for

petroleum products; as dispersants in printing ink; and as defoamers in paper making.

\*Societe Belge de L'Azote et des Produits Chimiques du Marly.

## U. S. Oils May Face African Competition

UNITED STATES oilseeds and edible oils may in the future face substantially greater competition in European markets as result of increased supplies of high quality, edible-grade palm oil in West Africa, according to a U. S. Department of Agriculture marketing study. The large supplies of high quality oil are the result of important improvements which have been, and are continuing to be made in palm oil quality, especially in Nigeria and the Belgian Congo.

The Department's study indicates that West African production of oilseeds is not likely to increase rapidly in the near future. Native production, still the major source of supply, is directly affected by world prices, and weather also is an important factor.

Volorous H. Hougen, of the Foreign Agricultural Service, conducted the fats and oils marketing study in all countries on the African west coast from Senegal to Angola, to obtain firsthand information regarding the production there of vegetable oils and oilseeds, principally palm oil, palm kernels and peanuts.

Additional observations by Mr. Hougen, based on individual areas of West Africa covered by his study will be published soon by the Foreign Agricultural Service, U. S. Department of Agriculture, Washington 25, D. C.

## WHAT DID LESLIE SAY ABOUT—

DECEMBER WHEAT? DECEMBER RYE? MARCH WHEAT?

Letter #503, June 14—"We suggest you raise your buying point on December Wheat to 196¼, or for long term 198¼ March."

On June 18 December Wheat made its *season's low* of 195¼.

RECENT PRICE—217¼

PROFIT PER CONTRACT—\$1050

On June 18 March Wheat made its *season's low* of 198.

RECENT PRICE—218

PROFIT PER CONTRACT—\$988

Letter #502, June 7—"Hold December Rye bought last week at 107½. If you did not follow our recommendation then, we advise you to buy now at 110 or lower." This was filled that Monday at 109¾.

RECENT PRICE—123¼ PROFIT FIRST PURCHASE—\$787  
SECOND—\$668

WHAT DOES THIS WEEK'S ISSUE OF THE LESLIE COMMODITY LETTER SAY ABOUT—MARCH MEAL? JANUARY AND MARCH SOYBEANS?

SUBSCRIBE TODAY—1 year \$85 6 months \$50 5 weeks \$10

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## Heads Southeast Sales

H. A. "Whitey" Glazner has been named the new Southeastern district sales manager for McMillen Feed Mills with headquarters in the new Master Mix plant at Chattanooga, Tenn.

Mr. Glazner joined the company in 1937 as a salesman. He was made director of field service in 1951 and since that time has traveled widely, helping poultry and livestock feeders. His years of experience in the feed industry make him ideally qualified for his new work in the "broiler belt" of America.



H. A. Glazner

## "Soybean" Briggs Has Retired at Wisconsin



George M. Briggs

**G**EORGE M. "Soybean" Briggs, extension agronomist at the University of Wisconsin, retired June 30 after 35 years association with the department. He has been succeeded by Dr. Don Peterson, who has been connected with the State College of Washington at Puyallup in agronomy research on forages the past year.

Briggs was county agent in Burnett County, Wis., from 1916 to 1919, when he entered the department of agronomy at the University. His interest in soybeans has been lifelong.

He has played a considerable part in the improvement of Wisconsin varieties of soybeans. He is author of a circular, "Plant Soybeans," and co-author of a bulletin, "Soybeans, a Crop Borrowed from the Orient," and of other circulars.

One of the organizers of the American Soybean Association and a former president, he was elected an honorary life member in 1953.

Peterson received his Ph.D. at the University of Wisconsin in 1953. He will do extension work in grain crops, including soybeans, and weed control.

## Thailand Bean Crop

Production of soybeans in Thailand in 1953 is assumed to be equal to the 1952 output of 850,000 bushels, according to USDA's Foreign Crops and Markets.

In Thailand, soybeans are not used for the production of oil, but large quantities are converted into soya sauce and bean curds.

On the basis of nine-months' exports, shipments for the year are estimated at 108,000 bushels.

AUGUST, 1954

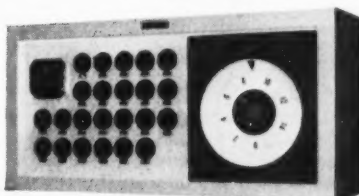
## Stored grain protected

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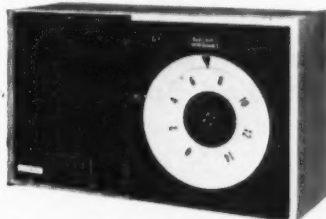


**spot**  
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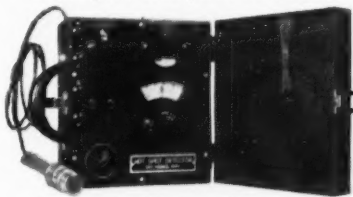
**G**RAIN ELEVATORS, terminals and country stations throughout the world are finding the Hot Spot Temperature Measuring System the accurate, convenient way to guard against spoilage. The first, modern, electronic system for checking grain temperatures, the Hot Spot System pays for itself by pointing accurately to local heating that accompanies moisture pockets, mold or germ action, or insect damage.



Minneapolis-Honeywell instrument



Minneapolis-Honeywell instrument



Minneapolis-Honeywell instrument

**Switch-controlled unit**, installed in the gallery or headhouse, lets you scan through each bin manually from top to bottom in a matter of seconds. The temperature measuring instrument is a Minneapolis-Honeywell *ElectroniK* Potentiometer, developed especially for this system . . . responds to changes as small as one-fifth of a degree Fahrenheit.

**Automatic scanning system**, designed for location in your office, automatically switches through each point in each bin. Coded signal lights identify each temperature point as it is measured. The Minneapolis-Honeywell *ElectroniK* instrument gives quick, accurate indication of temperature. System can also be operated manually.

**For spot checking**, use this compact Portable Potentiometer, developed by Minneapolis-Honeywell for Hot Spot Detector, Inc. A jack plug lets you connect the bin thermocouple cable for an on-the-spot measurement.

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Instruments, for Hot Spot Detector Systems, are made exclusively by Minneapolis-Honeywell . . . *First in Controls*

# Processors Had a Bad Year

SOYBEAN crushers have had a very difficult year because of high costs that could not be passed on in sufficiently high prices for the end products, T. L. Daniels, president of Archer-Daniels-Midland Co., Minneapolis, told the Congress of the International Association of Seed Crushers at Cannes, France, June 2.

"Cottonseed crushers have fared relatively well," said Daniels. "The 1953 crop was supported at 75 percent of the parity price contrasted with 90 percent of parity in 1952. Thus the end products could be sold at highly competitive prices with soybean products and leave the cottonseed crusher a reasonably satisfactory margin of profit.

"The government's asking price for its CCC stocks of cottonseed oil for domestic use at 14 cents per pound and later at 15 cents per pound has effectively reduced the free supplies to the point where supply and demand are approximately in balance.

"Large supplies of cottonseed meal have been disposed of by the CCC in connection with the relief program to drought stricken areas. The disposal price of \$35 per ton was such as to clear the Commodity Credit Corp. stocks completely. . . . Crushers of soybeans were adversely affected in those areas where soybean meal and cottonseed meal are competitive.

"The U. S. Department of Agriculture announced April 9 that the

1954 cottonseed crop would be supported at 75 percent of parity . . . With the 1954 crop of soybeans supported at 80 percent of parity, processors of soybeans will not find themselves at as great a disadvantage compared with cottonseed crushers as during the past crop year.

"Cottonseed oil usually commands a slight premium over soybean oil in the domestic market but this has largely disappeared in recent months due in part to the relatively larger free supplies of cottonseed oil.

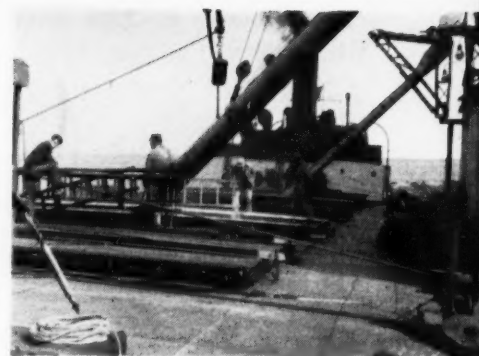
"Disappearance of the two oils, relative to each other for selected months of 1953 and 1952, is as follows (thousands of tanks):

	1953		1952	
	Cotton-seed Oil	Soy-bean Oil	Cotton-seed Oil	Soy-bean Oil
August	1.2	3.7	1.4	3.7
September	1.5	3.7	1.7	3.2
October	2.2	4.1	2.0	3.5
November	2.9	3.6	1.5	3.6
December	2.3	3.2	1.8	3.5
January	2.3	3.5	1.6	3.6

"Thus it is seen that cottonseed oil is gaining ground at the expense of soybean oil. This has been due to greater consumption at home and to an increase of exports—out of CCC stocks."

## Sees Big Demand for Canadian Soybeans

THERE IS a tremendous demand for oilseeds at the right price in Great Britain and the European Continent, K. A. Standing, secre-



—Photo by Arland R. Meade

**FIRST SHIPMENT** of soybeans directly from Oswego, N. Y., to a foreign port was recently made by Oswego Soy Products Corp. Here are two of the three pipes through which the beans were loaded into the steamship Judge Kenefick from the elevator at Oswego. The beans were shipped to Victory Mills, Ltd., at Toronto. The shipment does not herald any special plan of export for Oswego Soy, according to the company.

tary-manager of the Ontario Soybean Growers' Marketing Board, Chatham, reports. Standing recently returned from a European fact-finding mission.

Standing reported that while European buyers want to buy where prices are the lowest, they are looking for quality and willing to pay for it.

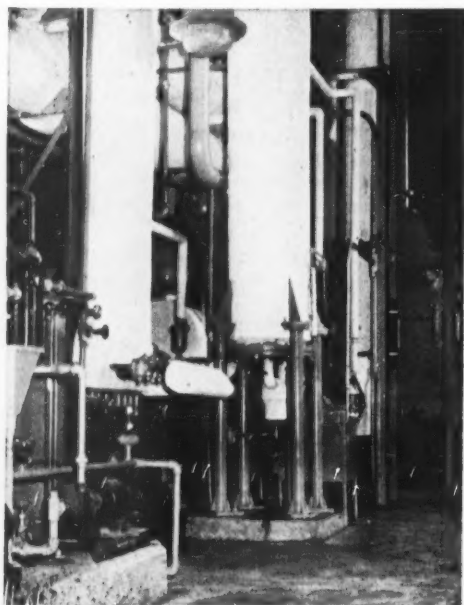
Standing said that Canadian quality has been very acceptable and buyers are interested in continuing quantities if the quality can be kept up. He said that splits do not enter into purchasing agreements on soybeans in Europe and the U. K., but that major problems are other grains, weed seeds and dirt. Manchurian soybeans usually arrive 99 percent pure and are bought on a "grade and arrival" basis.

Canadian soybeans have the edge in the British market since they are not subject to the 5 percent duty if they can be identified as of Canadian origin.

## Peiping Oil Monopoly

The Peiping government plans to create a state monopoly in edible oils, eliminating China's age-old free market in fats and oils as a first step in coping with a fats and oils shortage, according to an Associated Press dispatch from Hong Kong.

For many months Chinese housewives have had to line up to get cooking oils, and people complain about scarcity and adulteration, according to the Associated Press. Since Chinese do not eat a large amount of dairy products or meat, cooking oil is their chief source of fat.



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# RESEARCH PROJECTS at the Ontario Agricultural College

By P. VANSCHAIK

Department of Field Husbandry, Ontario  
Agricultural College, before Ontario  
Soybean Convention

**T**HE SOYBEAN crop is still a relatively new crop to Ontario. The acreage has increased at a very rapid rate during the past 15 years from approximately 10,000 acres to over 200,000 in 1953. With this increased popularity of the crop came an increased need for research. The work carried out by the field husbandry department of the Ontario Agricultural College can be divided into three main groups:

- 1—Breeding program.
- 2—Research on cultural practices, etc.
- 3—Regional variety testing throughout the province.

The soybean breeding program at the College was started in 1950 and therefore at the present time is still in the process of being built up. It has not advanced far enough that new varieties are likely to be released in the very near future. The chief aim of the breeding program is the production of varieties suitable for Ontario's soybean producing areas.

Early maturity is one of the characteristics we are primarily interested in for the northern regions of soybean adaptation. Under test now are a considerable number of lines of advanced generations of such crosses as Richland x Flambeau, Lincoln x Kabott, Mukden x Capital, and Blackhawk x Mandarin.

Most of these are progenies of material supplied to the College by other experiment stations in Canada

and the U.S.A., when our breeding program was initiated in 1950. During the past three years a number of crosses were made at Guelph and plant lines of these are now also under test. In 1953, 12 different crosses were successfully made between the varieties Flambeau, Harbome, Comet, Renville, Harosoy, Goldsoy and others.

Weed control in soybeans is still one of the great problems. Considerable work is being done to develop chemical materials which will effectively control weeds and at a reasonable cost. Two of these materials have been under test at Guelph, one a dinitro compound called Premerge, the other a naphthyl phthalamic acid called Alanap. Both were supplied as pre-emergence sprays at five different rates of application. The results of weed counts four weeks after seeding are shown in Table 1.

TABLE 1.

	Rate of application	Ave. no. of weeds per sq. ft.
Control		15
Premerge	2 lbs./acre	10.2
	4 lbs./acre	8.0
	6 lbs./acre	4.5
	8 lbs./acre	4.2
	10 lbs./acre	3.2
Alanap	2 lbs./acre	3.0
	4 lbs./acre	2.2
	6 lbs./acre	1.5
	8 lbs./acre	1.5
	10 lbs./acre	2.0

No reduction in vigor or yield resulted from the application of either of these chemicals. The results of

these tests have been encouraging but are definitely not conclusive. The effectiveness of control by chemicals is seriously affected by prevailing environmental conditions such as smoothness of soil surface, moisture content of the soil, temperature, etc.

The tests will be continued for several years before any definite recommendations can be made.

Time of planting is very important, especially in the northern regions where the growing season is short. A date-of-planting experiment was started in 1952 to determine the effect of time of planting on yield and oil content of soybeans. This experiment included seven plantings of three varieties during seven consecutive weeks.

The first planting was done on May 16th and the last on June 27th. This last planting was later discarded because of very low emergence and insufficient maturity at harvest time. The results of the six remaining plantings were very distinct showing a decrease both in yield and in oil content of the seeds from early to late planting.

TABLE 2.

Variety	Decrease in yield from 1st to 6th planting	Decrease in oil %
Flambeau	31.2 - 25.3	19.0 - 18.0
Mandarin	32.6 - 19.2	19.5 - 17.8
W6S-292	25.4 - 20.2	20.4 - 18.4

These results point at the desirability of planting reasonably early if weather and soil conditions permit.

In view of the marked results obtained in greenhouse experiments of antibiotic treatments on forage legumes a test was initiated to study the effect of different antibiotic seed treatments on soybeans. Aureomycin, penicillin, and terramycin were applied at four different rates prior to seeding. Notes were taken on germination, stand, vigor and yield. No effect was obtained during the 1953 season on any of these characteristics.

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## CROP REPORT

# Bean Belt Drought Deepens

A RAPIDLY deepening drought had most soybean territory in its grip in late July, with rather general rains the third week of the month apparently at least temporarily checking the condition.

Crop prospects in some areas were cut during July by searing temperatures and drought of some weeks standing.

The yield outlook was still rated as excellent in Minnesota, northern Iowa, and in a belt through northern Illinois, northern Indiana and Ohio. Areas suffering worst included the fringe west of the Missouri River, extreme southern Iowa, southern Illinois, Missouri, Arkansas and Mississippi.

Weeds were only a minor problem most places due to the dry weather. Grasshoppers were reported to be the No. 1 pest over much of the soybean belt. Bean leaf beetles were reported in Louisiana and garden webworms in southwest Iowa, where they were causing light to heavy damage. J. M. Dunleavy, Iowa State College plant pathologist, forecast possible later trouble in Iowa with Rhizoctonia root rot, after a survey covering 1,150 miles in late June.

About 17.3 million acres are expected to be harvested for beans this year—a record—if growers carry out their intentions as of July 1, according to the crop reporting board of USDA's Agricultural Marketing Service.

The North Central region shows an 18 percent increase in acreage, with increases in all states except Kansas. Increases range from 7 percent in Indiana to 47 percent in Minnesota.

As feed supplies were short in Kansas farmers turned to hay and sorghum rather than soybeans.

The South Atlantic states show an increase of 8 percent, with all states but Georgia increasing their acreage.

Soybean production continues to expand in the Midsouth states, where a 17 percent increase is indicated. Much of the increase comes in the Delta land of Mississippi, Arkansas and Louisiana.

A tentative crop estimate of 345 million bushels was made by C. M. Galvin, crop statistician for Francis du Pont & Co., July 1. This compares with 262.3 million bushels in 1953.

On-the-spot reports from Soybean Digest correspondents:

**Arkansas.** L. M. Humphrey, R. L. Dortch Seed Farms, Scott (7/19):

Crop condition very bad. Many fields burned up beyond recovery. Last 42 days 90 degrees or more, 20 of these over 100. Total rainfall in period .79 inch. Yield outlook worst in years.

**Illinois.** Albert Dimond, Lovington (7/20): Crop condition fair to poor to punk with 50 percent punk. Weather hot and dry with no subsoil moisture. Many fields have shed leaves halfway up plant. Can't guess yield but it will be worst this area has had. So far bean fields look a little better than corn. Two-thirds to three-fourths of beans in Illinois are in area hit.

W. V. Simmons, Quincy Soybean Products Co., Quincy (7/19): Soybeans that are blooming are seriously damaged account drought and hot winds. No soil moisture.

**Indiana.** J. B. Edmondson, Danville (7/20): All beans short due to drought. Late sowed beans at standstill about one-half knee high, blooming and podding at bottom. Outlook at moment for a 75 percent crop.

Chester B. Biddle, Remington (7/20): Maturity advanced. Outlook excellent. Yield outlook good. Could use some moisture this week.

**Iowa.** Robert Overton, Knoxville (7/20): Beans have been damaged considerably already and unless we get immediate relief from hot dry weather the crop will be cut to half or one-third of normal. Both surface and subsoil moisture very deficient.

**Mississippi.** J. T. Thomas, Cruger (7/18): No rain in 60 days. Subsoil moisture playing out. Some exceptions to this have had scattered showers. With average to above rainfall for balance of season we could have a normal crop. However, with a 30-day forecast of light rainfall and high temperatures I would say this crop in the Delta would duplicate the crop of the last three seasons, and that has been poor.

**Missouri.** H. A. Seeburger, St. Charles (7/20): On heavy soils still some moisture but on light and sandy soils it is about all gone. If we do not get any rains yield will be cut.

Carver Brown, Laddonia (7/21): Heat and drought have done severe damage. Situation critical. If it continues will be very little yield.

**Ohio.** E. M. Wiecher, Delphos Grain & Soya Products Co., Delphos (7/21): Growth ahead of normal

PLANTED ACREAGE OF SOYBEANS  
(thousand acres)

State	Acreage grown alone for all purposes			Acreage for beans		
	Average 1943-52	1953	1954	Harvested Average 1943-52	1953	For har- vest 1954
N. Y. ....	11	7	9	8	5	7
N. J. ....	37	41	46	16	27	31
Pa. ....	67	37	35	27	19	17
Ohio ....	1,106	1,064	1,202	1,032	1,036	1,178
Ind. ....	1,693	1,853	1,963	1,516	1,755	1,886
Ill. ....	3,993	3,997	4,376	3,570	3,751	4,247
Mich. ....	113	118	136	95	110	120
Wis. ....	76	70	91	38	56	71
Minn. ....	819	1,400	2,050	760	1,351	1,906
Iowa ....	1,769	1,617	2,167	1,707	1,597	2,145
Mo. ....	1,022	1,963	2,159	933	1,824	2,032
N. Dak. ....	18	23	86	15	23	85
S. Dak. ....	42	90	180	39	87	176
Nebr. ....	43	108	194	40	105	190
Kans. ....	332	598	472	296	496	449
Del. ....	67	72	80	51	64	72
Md. ....	87	115	132	52	95	112
Va. ....	182	231	245	115	167	181
W. Va. ....	21	9	10	1	.....	.....
N. C. ....	400	397	413	254	263	289
S. C. ....	68	150	182	41	130	170
Ga. ....	73	100	100	17	50	57
Fla. ....	17	20	.....	.....	.....	.....
Ky. ....	198	200	200	102	96	96
Tenn. ....	246	258	297	130	150	175
Ala. ....	197	149	161	52	92	104
Miss. ....	382	494	642	209	250	475
Ark. ....	476	800	920	391	665	845
La. ....	110	117	152	30	40	60
Okla. ....	46	75	70	25	50	47
Tex. ....	11	5	7	.....	.....	.....
U. S. ....	13,523	16,085	18,825	11,559	14,366	17,329

Crop reporting board of USDA's Agricultural Marketing Service.

seven to ten days. Moisture adequate. Crop in critical stage. Need temperature under 90 degrees for 10 days.

**South Dakota.** H. G. Miller & Son, Garden City (7/21): Maturity of crop about 10 days late due to spring planting. Dry and hot all through July. Moisture needed badly. Yield could be small if we do not get rain soon.

**Ontario.** R. H. Peck, River Canard (7/21): Weather has been hot and generally dry with very little moisture reserve. Possibly 25 percent of fields will be half crop to nothing. And general rains needed to insure average yield in rest. Some areas have good crops.

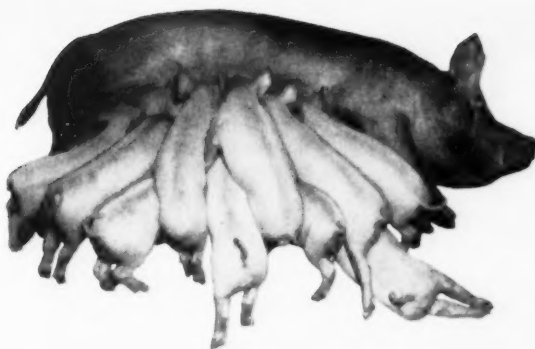
## Benelux Lowers Bar

Belgium, Luxembourg and the Netherlands have published a "common list" of commodities that may be imported without quantitative restriction from the United States and other dollar sources, according to Foreign Agricultural Circular of the U. S. Department of Agriculture.

These commodities which include soybeans and vegetable oils, may also be transshipped between the three Benelux countries.

The adoption of the common list furthers the declared intention of the Benelux governments to pursue vigorously liberalization of their trade with dollar countries.

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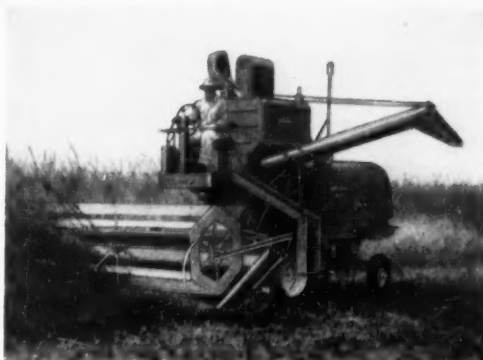
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## LETTERS

### On Cottonseed Meal

TO THE EDITOR:

I have noted with interest in the July edition of the Soybean Digest your brief review of the research conducted by Professor C. L. Morgan, South Carolina Agricultural Experiment Station, in which various cottonseed meals were compared to soybean meal as a source of protein for chicks.

It would appear that it would have been desirable for the review to have included that part of the same experiment in which mixtures of the soybean meal and various cottonseed meals were compared to soybean meal alone. The published report of the work indicates that both gains and feed efficiency were comparable to those of soybean meal alone when half the soybean meal was replaced with either of the three samples of cottonseed meal tested.

Professor Morgan stated in his paper, "All of the cottonseed meals in combination with soybean meals as the protein supplement produced weights equal to those on the control ration supplemented with soybean meal."

He also stated, "There was a very high efficiency of feed utilization by the chicks on the soybean meal control ration and on the rations supplemented with combinations of soybean meal and the various cottonseed meals."

We consider that phase of Professor Morgan's work to be especially important. Much additional data, obtained at various agricultural experiment stations, caused nutrition research workers to adopt the following official statement during the third Conference on Cottonseed Processing as Related to Cottonseed Meal Nutrition, Nov. 11, 1953:

"Results presented thus far indicate that chick and broiler rations containing cottonseed meal and soy-

bean meal in equal proportions on a nitrogen basis are equal or superior to rations based on either cottonseed meal or soybean meal alone, when the cottonseed meal used has 0.04 percent or less free gossypol and 75 percent or more of nitrogen solubility in 0.02N NaOH solution."—A. L. Ward, educational service, National Cottonseed Products Association, Dallas, Tex.

### Sell Soy to Humans

TO THE EDITOR:

I have been a member of the Association and a subscriber to the Digest for many years and I have no criticisms to offer. I enjoy the magazine and it keeps me informed on the soybean situation. I notice it carries information on the growing and processing of the bean in Canada, which adds to its value for me.

I would like to pass along a suggestion for your consideration on future policy. In cooperation with the processors, the Digest has done a wonderful job in promoting the use of soy in animal nutrition and I am wondering if the time is now ripe to really sell soy in human nutrition, not as a substitute for other ingredients but on its own merits as probably pound for pound the most economical source of protein in food technology.

I know soy products are used in some food items, margarines, special breads, multipurpose meals, etc., but its use in such staple foods as breads, macaroni, etc., as a means of stepping up the protein content of these foods, is still far from general. Sometimes I think we have gone much further in animal than in human nutrition.

When we consider that 2 percent soy based on the flour content of the dough can increase the protein content of the loaf by 20 percent, the advantages of its use in nutritional value on one hand and its value as an outlet for soy flours, seems to be worth going after.

Even on this continent with all its

resources, the need for a low cost protein is acknowledged by all nutritionists.

I believe if the Association and the soy processors can get together they can convince the baking and macaroni industry that soy can help them produce foods more nutritious and palatable with added soy flours, and I look forward to the day when soy flour will be a standard ingredient in these products.—James L. Doig, Montreal, P. Q.

### Agrees 100 Percent

TO THE EDITOR:

I just read your editorial on page 4, the June issue, on "World Markets."

It is to be regretted that there are so few who see as you do. I agree 100 percent and any sane person should be able to see that if our prices are too high—I mean out of line with other countries—our products will not be bought and naturally a surplus will be the consequence.

I cannot see the sense of high price supports and then have to put the products into storage as in the case of dairy products. Why not take our medicine even if it is a bitter pill? I feel we will have to take it sooner or later.

I feel that you are doing us a great service. Hope to see you at Memphis.—E. W. Trachsel, Helena, Mo.

## FEEDING

**FATS.** It has been confirmed that wheat germ oil, corn oil, soybean oil and oleic acid concentrate are sources of unidentified chick growth factors in experiments at Iowa State College.

Commercially hydrogenated soybean oil in the form of margarine did not contain much of the growth factor actively possessed by soybean oil. Margarine and butter were approximately equal as fat supplements for chicks.

FURTHER STUDIES OF THE

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**UNIDENTIFIED CHICK GROWTH FACTORS IN UNSATURATED FATS.** By Donald S. Carver and Elton L. Johnson, Iowa State College. Poultry Science, Vol. 33, No. 3, pages 543-548. May 1954. Kansas State College, Manhattan, Kans.

**CHICKS.** A hemorrhagic condition, varying in severity, was observed in New Hampshire chicks raised on wire-floored batteries and fed a simplified corn-soybean oil meal ration in West Virginia experiments.

The condition was cured or prevented by administration of menadione, dehydrated alfalfa meal and fresh or dried droppings.

**A HEMORRHAGIC CONDITION IN CHICKS FED SIMPLIFIED RATIONS.** By C. G. Anderson, J. H. Hare, J. K. Bletner, C. E. Weakley, Jr., and J. A. Mason. Poultry Science, Vol. 33, No. 1, January 1954, pages 120-126.

**PIG RATION.** Macdonald College in Quebec has devised a low-fat dry feed mixture suitable for feeding to pigs weaned at 10 days of age.

Composed of 10 percent soybean oil meal, it will permit growth and development fully equal to that of sow-nursed pigs.

**A MEAL MIXTURE SUITABLE AS THE ENTIRE RATION TO BE SELF-FED DRY TO PIGS WEANED AT 10 DAYS OF AGE.** By E. W. Crampton and O. M. Ness, Macdonald College. Journal of Animal Science, Vol. 13, No. 2, pages 357-364. May 1954. Boyd Printing Co., 372-374 Broadway, Albany 7, N. Y.

**QUAIL.** Rations containing about 20 percent protein and consisting mainly of corn and soybean oil meal are satisfactory for quail when properly supplemented.

Wheat bran is quite promising as a supplement due to its relatively high lysine content.

**LOW PROTEIN RATIONS FOR THE BOBWHITE QUAIL.** By James T. Baldini, Roy E. Roberts and Charles M. Kirkpatrick, Purdue University, Lafayette, Ind. Poultry Science, November 1953, 945-949.

## MISCELLANEOUS

**WHOLE COTTONSEED VS. COTTONSEED MEAL FOR WINTERING RANGE CATTLE.** By J. A. Darnell, T. B. Patterson, C. E. Lindley and B. F. Barrentine. Information Sheet 487, Mississippi State College, State College, Miss.

For a complete list of books on the soybean crop and industry and related subjects drop a postcard to Circulation Department, Soybean Digest, Hudson, Iowa. Copies of books and other publications listed on our pages will be obtained for readers when requested, if possible.

AUGUST, 1954

## Has Problem with Pre-Emergence Spray

**PRE-EMERGENCE** spraying of soybeans with the dinitros such as Sinox PE resulted in good weed control in New Jersey this spring, according to Donald A. Schallock, extension associate in field crops at the New Jersey College of Agriculture, New Brunswick.

Schallock says that early in July there were many acres of excellent beans with no weeds visible.

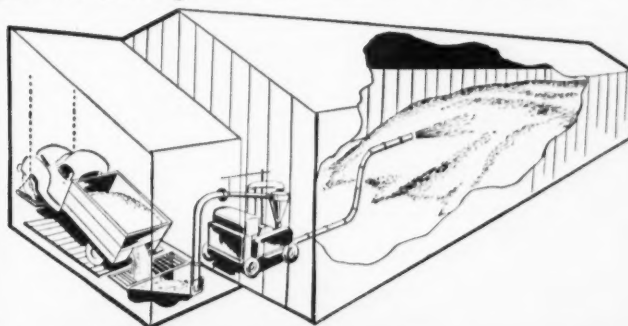
"The problem we ran into in cen-

tral Jersey was a severe injury to small beans, due to the fact that the dinitro remained on the soil surface during a prolonged dry and hot spell. The injury was attributed to vapors from the chemical applied.

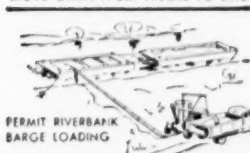
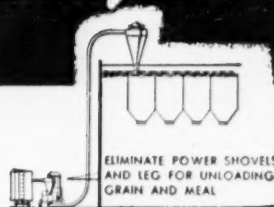
"Several farmers disked their crop in, but when we were called, we advised them that the soybeans would grow out of the injury. It is too early to tell now.

"The weed recommendations are not being changed as a result of this occurrence. The combination of time of planting and the dry, hot weather made us feel that it was a 'freak' occurrence."

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## GRITS and FLAKES . . . from the World of Soy

◆ St. Regis Paper Co. announces that the New Orleans, La., office of its multiwall packaging division is now located at 307 Carondelet Bldg., New Orleans 12, La. Herman Haberle continues in charge of the New Orleans office.

◆ Integration of five major industrial-agricultural operations of the Glidden Co. into a newly-created chemurgy division was announced by Dwight P. Joyce, president. The new division is headquartered in Chicago, with Wilard C. Lighter, Glidden vice president, in charge.

◆ Arthur P. Berry, formerly head of the chemical division of El Dorado Oil Works, San Francisco, was elected president of the firm. He succeeds James Moller, resigned. J. W. Howell, formerly manager of the Bayonne, N. J., plant, was named vice president of the company.

◆ "How Do You Judge a Whipping Agent?" by R. Henika, J. Reger and H. Tengquist, all of Western Condensing Co., is an article in the July issue of the *Manufacturing Confectioner*.

◆ Dannen Mills, Inc., St. Joseph, Mo., has signed a contract with Combs & Co. for increasing the capacity of the Dannen elevator at Milan, Mo., according to Dwight L. Dannen, company president. Gene Sterling is manager of the Milan office.

◆ J. D. (Jud) Brance was elected president and general manager of Fort Worth Steel & Machinery Co., Fort Worth, Tex., at a recent board meeting. He succeeds J. I. Jackson who had been with the firm 25 years. Mr. Brance was formerly executive vice president. He was the organizer and former majority owner of Brance-Krachy Co., Inc., Houston industrial distributing firm.

◆ Dannen Mills, St. Joseph, Mo., has announced the engagement of Valentine-Radford, Kansas City advertising firm, to handle all of the Missouri Valley soybean processor's advertising.

◆ Georgia Feed and Poultry Conference for 1955 will be held June 19-21, at the Dinkler Plaza Hotel, Atlanta, Ga., Will L. Kinard, secretary, 208 William-Oliver Bldg., has announced.

◆ The Bagpak division of International Paper Co. is opening a new sales office in Des Moines, Iowa, R. I. LaMarche, sales manager, announces. Dale Rowe will head the new office. He spent three years at the company's Camden bag plant prior to his present assignment. Location of the new office will be announced shortly.

◆ The 28th annual fall meeting of the American Oil Chemists' Society will be held at the Radisson Hotel in Minneapolis Oct. 11-13. General chairman is J. C. Konen, Archer-Daniels-Midland Co., and program chairman is Harold Wittcoff, General Mills, Inc.

◆ Sutton, Steele & Steele, Inc., Dallas, Tex., has announced the appointment of Charles E. McCartney, Kansas City, as sales and service representative in Missouri, northern Arkansas, eastern Kansas and eastern Nebraska. He will specialize in the varied uses of specific gravity separators and air-float stoners in grain, seed, food, and chemical processing operations.

### Is New FAS Head

William G. Lodwick, an Iowan who has had broad experience in agriculture—both as a farmer in his home state and as an adviser in the foreign field—was appointed by Secretary of Agriculture Ezra Taft Benson as administrator of the USDA's Foreign Agricultural Service.



Clayton E. Whipple, who has

Wm. G. Lodwick served as acting administrator of the FAS, will continue in his position as deputy administrator. The FAS is the Department agency which, as a principal function, is making concerted efforts to regain and expand foreign markets for U. S. agricultural products.

The experience Lodwick brings to his new assignment includes operation from 1940 to 1950 of a farm near his home town of Centerville, Iowa. Prior to that time he practiced law in Chicago. From 1950 up to the present time he has served in various capacities as a consultant on foreign agricultural problems.

### To J. R. Brown Co.

News of the appointment of E. A. Coons as vice president and general manager of the R. J. Brown Co., St. Louis, effective Aug. 1, has been released by R. J. Brown, president.

Mr. Coons has been purchasing agent in the chemical division of the purchasing department of E. I. du Pont de Nemours & Co. since 1947. Prior to that he served in various capacities with Sinclair Refining Co. He came to Bronoco with widely-diversified experience.

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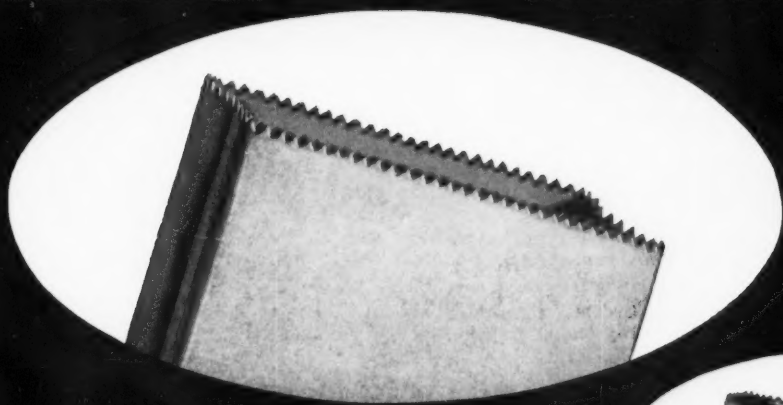
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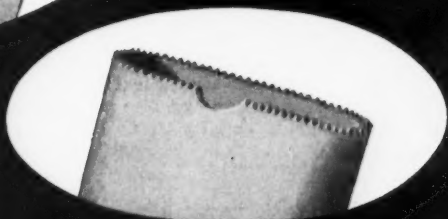
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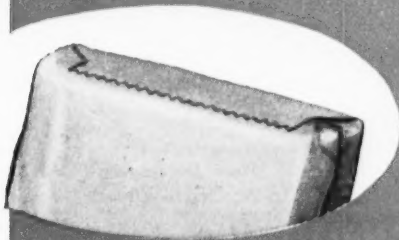
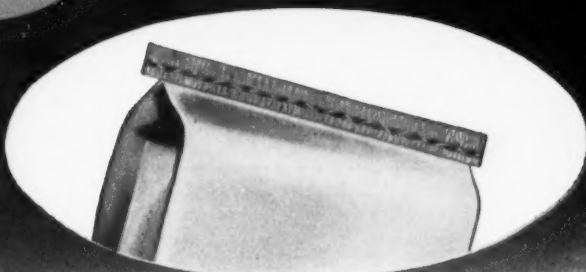
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♦ John W. Evans, Montevideo, Minn., former American Soybean Association president, was recipient of an alumnus citation from Hamline University, St. Paul, Minn., for scientific agriculture at the University's recent centennial convocation. Mr. Evans was a member of the class of 1911.

♦ C. L. Strock, editor of General Mills, Inc., publications at Minneapolis, Minn., was winner of a Hudson Jetliner auto for developing the winning slogan at the recent conference of the International Council of Industrial Editors at Detroit.

♦ International Paper Co. has opened a new branch sales office in Cincinnati, Ohio, it is announced by F. H. Savage, vice president and general sales manager. The new office is located in the Dixie Terminal Bldg., 49 E. 4th St. It will house representatives of three of the company's principal sales and converting divisions, including the Bagpak division. James Woodrow will represent the firm's Bagpak division.

♦ "New Plant Tailored to Vegetable Oil 'Ice Cream'," was an article by Arthur J. Reitz of Frozen Desserts, Inc., Los Angeles, in July Food Engineering.

♦ James A. Wilson, former manager of International Minerals & Chemical Corp.'s Bonnie, Fla., plant, has been promoted to the position of production manager for the phosphate chemicals division. He will be responsible not only for the Bonnie plant but also for International's chemical plants at Wales, Tenn., and at Tupelo, Miss. Neil O'Donnell, who has been acting superintendent of the Bonnie plant, becomes plant superintendent.

♦ Executives and personnel of Fulton Bag & Cotton Mills gathered recently at a testimonial luncheon in St. Louis to honor J. B. Cronheim on the occasion of his 55th anniversary with the company. He is vice president and a member of the board of directors of Fulton, as well as general manager of the company's St. Louis plant.

♦ The 21st annual meeting of the National Agricultural Chemicals Association will be held Sept. 8-10 at Spring Lake, N. J. Formal sessions will be held at the Essex and the Sussex.

## Change by Bemis



L. E. Cox



H. L. Bayne

Howard L. Bayne has announced his forthcoming retirement as manager of the Kansas City plant and sales division of Bemis Bro. Bag Co., effective Aug. 31. He will be succeeded as manager by L. E. Cox, now assistant manager.

Mr. Bayne has been with Bemis more than 40 years at Kansas City. He was named manager in 1949.

Mr. Cox started his career in the plant in Indianapolis in 1933 and later transferred to the sales organization. He moved to Kansas City as assistant manager in 1949.

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One man and the MM "69" make a threshing crew that's hard to beat. Light weight, light draft, straight-through design, and full length separation mean a fast, clean, low cost job in every crop.

'69'



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Powered and propelled by the MM Uni-Tractor, this MM Uni-Harvester combines your crops at a new low cost. The same Uni-Tractor also mounts the Uni-Faragor, Uni-Husker and Uni-Picker Sheller.



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Packed with new MM Firsts to stretch your yields . . . cut your costs! One-piece header, 3-chain riddle feeder conveyor, adjustable tread, and 8 cylinder speeds are typical advantages.

Big capacity, light weight, and outstanding performance make the MM G-4 Harvester biggest seller in the 12-foot size. Built for either one- or two-man operation . . . real cost-cutting efficiency.



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When you buy *any* of these 5 MM Harvesters, you buy performance that gets *all* your crop . . . gets it *clean* . . . gets it into the truck box in the *shortest possible time* . . . and at the *lowest possible cost*. You buy advantages that only the builders of the original, light-weight, big-capacity combine can offer . . . advantages that *keep* MM Harvesters—and Harvester-owners—*ahead* of the field!

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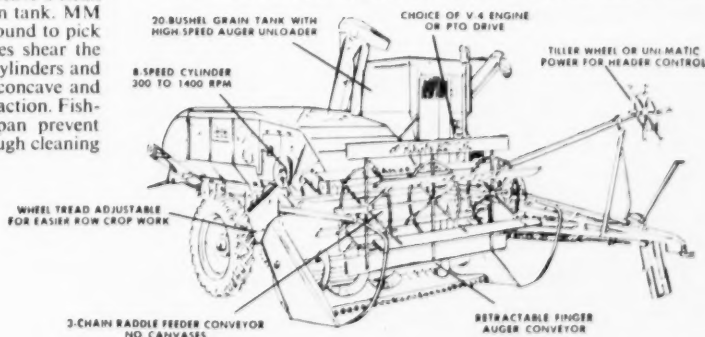
In grain, bean, or seed crops, MM Harvesters leave a clean field behind you . . . put top yields in the grain tank. MM headers travel as low as 2 inches above the ground to pick up flattened grain . . . high-speed MM sickles shear the crop with less shock and vibration. Rasp bar cylinders and the exclusive MM all-steel, one-piece welded concave and grate thresh with a thorough, gentle "rubbing" action. Fish-back channels in the exclusive MM grain pan prevent bunching of grain . . . give you the same thorough cleaning on level and rolling land.

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## Push is on for Farm Exports

**EXPORTS.** There will be plenty of ways for moving soybeans into export channels in the next year or so, if normal market demand is not sufficient to move all the beans desired.

Congress and the Administration are putting a big push on farm exports and surplus farm product disposal. In funds involved, it amounts to a total export program bigger than any since the years immediately following World War II.

The main new vehicle for moving surpluses is the new Agricultural Trade Development and Assistance Act. It authorizes \$1 billion to be spent within the next three years, and is now law.

The total funds, however, can be spent at any time, whether the three-year period has elapsed or not. If the program goes well, it's generally understood that Congress will provide additional funds.

The billion is broken into two parts: \$700 million are earmarked for sale of farm surpluses in exchange for foreign currencies. This is similar to the Section 550 program carried out by Foreign Operations Administration during the last fiscal year. The other \$300 million are for giveaway of surpluses to countries in need during emergencies.

The law authorizes making surpluses available to friendly populations, as well as to friendly nations. This opens the way to grants of food to the peoples in iron curtain countries, as well as to the people in Russia itself, if desired.

The Department of Agriculture will have a big hand in management of this export program—probably a major one. Exports under this program have to be above "normal." Officials are investigating in Europe, the Far East and in Latin America the possibilities of increasing exports above normal without cutting into regular commercial business.

The trade development act is only a part of this year's export financing. A big chunk of Mutual Security Act funds will be tagged for surplus crop disposal. House has earmarked \$500 million for this purpose; the Senate only \$350 million.

The lower figure probably will be accepted.

In addition, regular foreign aid funds under Foreign Operations Administration will be available for purchase of farm products. In the last fiscal year total funds spent under the FOA program were \$713 million. Of this, Section 550 funds (used for sale of products for foreign currencies) approximated \$245 million.

Only a small volume of soybeans—\$2,925,000 in purchases—moved under Section 550 in the last fiscal year due to the domestic shortage. However, many countries wanted soybeans put on the 550 list so they could pay in their own currencies instead of dollars.

A fair-sized volume of beans might move under the new program in the coming marketing year—provided the crop is well above 300 million bushels, and soybeans are placed on the "surplus" list.

**RESEARCH.** An additional \$100,000 will be available for soybean research during the fiscal year which started last July 1. Expenditure of this additional amount is directed by Congress in the new Appropriations Act. No new money is being made available, but a shift of funds within USDA is being made to take care of the increase.

Officials say the extra research money will be used for three major phases of expanded soybean research:

1—An expansion of analytical facilities to make a more careful check of all breeding lines for oil and protein content, as well as iodine number. Object is to be able to provide better information on breeding lines.

2—Fundamental research on breeding behavior, with a main object of finding the upper limits of soybean growth—both North and South.

3—An evaluation of all the soybean introductions and lines in an effort to obtain improved varieties for disease resistance.

Work at the soybean laboratory



By **PORTER M. HEDGE**  
Washington Correspondent for  
The Soybean Digest

at Urbana, Ill., will be strengthened under the new program, but research will be conducted in several other Midwest states, and in both northern and southern areas. Work will be handled cooperatively with experiment stations.

The increase in soybean research funds was favored by the American Soybean Association and other soybean groups.

**MELLORINE.** Output of mellorine and mellorine type of frozen desserts made with vegetable fats and oils more than doubled in 1953 the production of the previous year.

Nine states reported production of mellorine during 1953, says a report of USDA's Agricultural Marketing Service, totalling 22,494,000 gallons. In 1952, only four states reported mellorine production.

In some states such as Alabama and Arkansas state legislatures didn't authorize manufacture of mellorine or similar products until the year was under way.

Texas led the U. S. in mellorine output last year with 10,870,000 gallons—up 71 percent. Illinois, the second ranking state, gained 116 percent in output. Missouri production totalled 2,477,000 gallons, an increase of 39 percent.

**COTTONSEED.** USDA officials met with industry representatives late in July to discuss the relationship between soybean and cottonseed price support programs in the coming season.

In the meantime, the new cottonseed support program is set. With only a few changes, it's the same package program as last year. Support level is \$54 a ton instead of \$54.50 a year ago. Both represent 75 percent of parity.

For each ton of cottonseed purchased by a crusher at not less than support price, CCC offers to buy specified quantities of crude cottonseed oil, 41 percent protein cake or meal, and linters at specified prices.

A crusher taking advantage of this offer must sell all three commodities to CCC. However, crushers can repurchase cake and meal immediately from CCC at the package price, or \$1 less than the current market price, whichever is higher.

A fourth of the cottonseed oil produced in the last three years has been tendered to CCC under the package program. Total oil tenderings are 1,394 million pounds, of which 443 million pounds have been sold, mostly into export channels.

Total tenderings of cottonseed meal from the last three crops are 1,897,000 tons. Sales have totalled 1,791,000 tons, nearly all on the domestic market.

**OFFICIAL.** USDA has a new Assistant Secretary of Agriculture to replace John H. Davis who has resigned to head the Moffett program in agriculture and business at Harvard University.

He is Dr. Earl L. Butz, former head of the agricultural economics department at Purdue University, Lafayette, Ind. Dr. Butz is the third Hoosier in recent years to hold a key position in the Department.

Dr. Butz will have general direction of both the Agricultural Marketing Service and the Foreign Agricultural Service.

He is a Purdue graduate of 1932. He worked for the Federal Land Bank of Louisville from 1935 to 1937 while completing his doctorate thesis. After getting his doctor's degree in 1937, he became a faculty member at Purdue. He was named head of the Agricultural Economics Department in 1946. While on leave of absence in 1943 and 1944, he made a study of the production credit system for the Brookings Institute.

William McArthur has resigned as assistant director of the Commodity Stabilization Service grain branch to return to his farm near Mason City, Iowa. No successor had been named at press time.

## Margarine Takes Fifth of Soy Oil in 1954

**M**MARGARINE is expected to absorb a fifth or more of the nation's anticipated tremendous soybean oil production this year, according to S. F. Riepma, president of the National Association of Margarine Manufacturers.

The U. S. Department of Agriculture's latest crop report estimates that soybean planting in 1954 will total about 17,329,000 acres. Experience shows, according to the report, that this acreage may result in soybean oil production of about 3,300,000,000 pounds.

Margarine output for the first five months of this year, Mr. Riepma

reported, ran a record 594,169,000 pounds. At this rate the vegetable oil spread would score a new production mark of about 1,400,000,000 or more pounds for 1954. At the average rate of usage of the past 10 years this would mean consumption of 750 million pounds of refined soybean oil. This is almost equal to the oil equivalent of the entire crop forecast in Illinois.

## Don Vormezele

Don Vormezele, 17 of Durand, Ill., has been selected a state winner in the field of soybean production by the Illinois Foundation Future Farmers of America. He was recognized at the convention of the Illinois FFA in Springfield recently.



Don Vormezele

Don is the son of Mr. and Mrs. Leon Vormezele. He is an applicant for the state farmer degree. He was winner of the soybean award in section I in 1953.

Don started his soybean project in 1952. That year he raised seven acres of Hawkeye soybeans and his yield was 20 bushels to the acre. Last year he increased to 25 acres on a 50-50 partnership basis with his father. He used potash fertilizer, inoculated his seed and worked the seedbed well before planting, resulting in a yield of 33 bushels per acre.

This year he has a 30-acre field of level bottom land again on a 50-50 basis with his father.

## Market Street

We invite the readers of **THE SOYBEAN DIGEST** to use **MARKET STREET** for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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**SCALE TICKETS — FOR FAIR-**banks Printomatic Scales. Carbonized Tickets. Spiral Scale Books. Prompt Service—Reasonable Prices. Write us for quotation and samples. Douglas L. Mains Co., Box 468S, Quincy, Ill.

**FOR SALE—15 ANDERSON EX-**pellers; 10 Shriver and Sperry Filter Presses 42"x42" to 12"x12"; Anderson & Louisville Rotary Tube Dryers; Ro-ball and Rotex Screens; Hammer Mills. Send us a list of your Idle Machines—Consolidated Products Co., Inc., 52-54 Bloomfield St., Hoboken, N. J.

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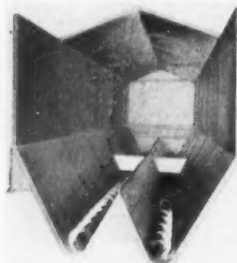
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## NEW PRODUCTS and SERVICES

**STORAGE BINS.** Enough head room to permit the installation of suitable bulk storage bins has been a problem with many companies. The Day Co. has announced a new, sanitary, horizontal-type bolted bin.



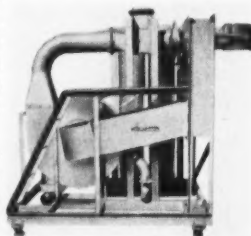
The bin is only 11 feet high and can be furnished in almost any length. Bolted sections can be inserted to make the bins taller or longer as desired.

For complete information write Soybean Digest 8c, Hudson, Iowa.

**CAR LOADER.** The Day portable pneumatic car loader provides some practical advantages for loading bulk material into boxcars. The unit travels on casters for portability and can be used to load at many stations. When it is located at the station desired the loader is easily raised off the casters and set down to a solid, permanent position.

The loader is fed from overhead screw conveyor through rotary valves and will load an 80,000-pound boxcar in from one to two hours.

For further information write Soybean Digest 8a, Hudson, Iowa.



**HARVESTER.** Allis-Chalmers' new Model 100 self-propelled All-Crop Harvester is described in a catalog just out.

This harvester is built to the same design as its pull-type companion, the popular 6-foot Model 66, and which distinguishes All-Crop Harvesters.

The new Model 100 is available with either nine- or twelve-foot header. It brings to the self-propelled combine field a new high in ability to harvest a wider range of crops, according to the manufacturer.

For a copy of the catalog write Soybean Digest 8b, Hudson, Iowa.

**FILTER SYSTEM.** Delpark settling and filter systems fabricated of stainless steel are now available for the filtration of liquids which would be affected by other types of metals.

Basic applications of this filter include the filtration of edible oils.

Designed for the filtration of particles .004-inch or larger, the system makes use of a settling basin for the removal of particles of varying weights prior to filtration through special bar stock screens.

Screens are of special bar stock construction and may be easily removed for cleaning.

For further information write Soybean Digest 8d, Hudson, Iowa.

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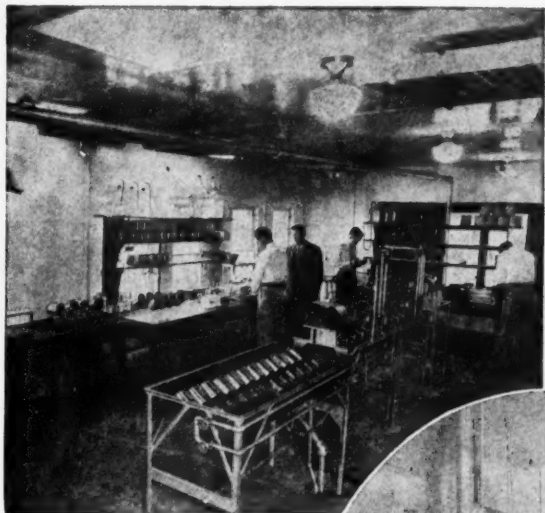
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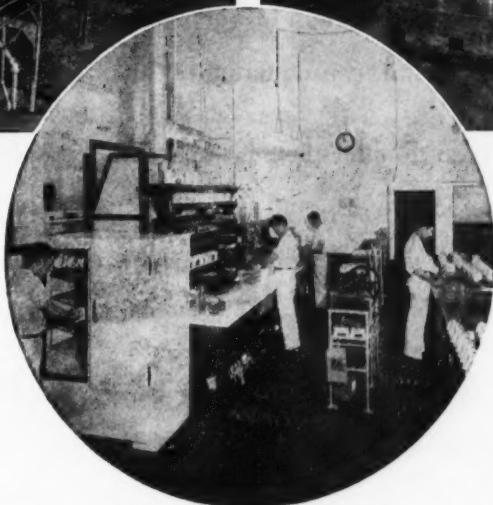
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## IN THE MARKETS

**SUPPLY AND DISTRIBUTION** of the 1952-53 soybean crops, reported by Agricultural Marketing Service. (1,000 bu.)

	1952-53	1953-54
Carryover(1)	3,575	10,137
Production	298,052	282,341
Total supply(2)	301,627	272,478
Farm use including seed for season	23,180	26,100
Quantity remaining for processing, export or carryover	278,447	246,378
Disappearance through May 31(3)		
Crushed for oil or processed(4)	171,438	161,424
Exported	25,869	36,064
Total	197,307	197,488
Balance on June 1 for processing, export, or carryover	79,140	48,890

(1) Stocks as of Oct. 1. (2) Imports negligible. (3) October through May. (4) It is estimated that around 5 million bushels of new crop soybeans were crushed prior to October in both 1952 and 1953. Therefore, 5 million bushels are included in the quantity crushed for both 1952 and 1953.

### SOYBEANS: SUPPLY AND DISTRIBUTION, 1951-53 (1,000 bu.)

Year and quarter	Stocks at beginning of period 1/					Total stocks	Production	Total supply
	Farms	Interior elevators	Crush- ing plants	Ter- minal markets	CCC 2/			
1951-52								
Oct.-Dec.	2,675	262	552	670		4,159	282,477	286,636
Jan.-Mar.	104,167	44,399	61,852	9,760		220,178		220,178
Apr.-June	60,095	21,858	42,708	5,457		130,118		130,118
July-Sept.	5,864	4,640	30,838	3,809		45,151		45,151
Season						4,159	282,477	286,636
1952-53								
Oct.-Dec.	1,958	296	611	710		3,575	298,052	301,627
Jan.-Mar.	83,621	48,346	79,352	13,394	1,037	226,250		226,250
Apr.-June	59,869	27,926	49,613	9,048	815	147,071		147,071
July-Sept.	20,393	11,393	26,905	3,245	356	62,292		62,292
Season						3,575	298,052	301,627
1953-54								
Oct.-Dec.	5,755	2,021	1,023	1,095	240	10,137	282,341	272,478
Jan.-Mar.	79,785	36,675	58,521	13,196	286	188,473		188,473
Apr.-June	36,640	16,800	22,297	11,461	36	117,294		

### DISTRIBUTION

Quarter or period	Used for seed	Net exports 3/	Crushed at mills	Feed & residual 4/	Total disappearance
1951-52					
Oct.-Dec.		7,281	67,951	8,674	66,458
Jan.-Mar.		4,256	68,943	17,761	90,960
Apr.-June	19,539	2,811	58,429	4,188	84,967
July-Sept.		2,697	50,057	11,178	41,576
Season	19,539	17,045	244,380	2,097	283,061
1952-53					
Oct.-Dec.		13,918	65,901	4,442	75,377
Jan.-Mar.		7,426	60,665	11,088	79,179
Apr.-June	20,539	6,349	57,163	728	84,779
July-Sept.		4,213	50,675	2,733	52,155
Season	20,539	31,906	234,404	4,641	291,490
1953-54					
Oct.-Dec.		23,614	62,328	1,935	84,005
Jan.-Mar.		5/ 7,912	58,903	4,364	71,179

1/ Oct. 1 stocks in all positions include only old crop soybeans. 2/ Owned by Commodity Credit Corporation in transit to ports. 3/ Imports negligible. 4/ Mostly quantity fed, but includes waste, loss, and statistical errors in estimates. 5/ Partly estimated. Stocks, production, and quantity used for seed estimated by crop reporting board; exports and quantity crushed from Bureau of the Census.

**PRICES.** Average price received by farmers, effective parity price and price support rates. (Dollars per bushel.)

Average farm price		Effective parity		Average price as percent of parity		National average price support rate	
June 15 1953	May 15 1954	June 15 1954	June 15 1954	June 15 1954	1953 crop	1954 crop	
2.66	3.55	3.49	2.82	124	2.56	2.22	

Average farm and parity prices from crop reporting board.

Soybeans, No. 2 Yellow: Average monthly price per bushel at Illinois country shipping points, 1946 - to date

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg.
1946-47	3.22	3.17	2.88	3.07	3.20	3.93	3.62	3.12	3.12	3.30	3.17	3.14	3.25
1947-48	3.38	3.69	3.94	4.23	3.43	2.52	3.88	4.00	4.14	3.79	3.19	2.73	3.66
1948-49	2.43	2.55	2.52	2.40	2.18	2.20	2.15	2.25	2.20	2.50	2.77	2.20	2.36
1949-50	2.16	2.10	2.20	2.20	2.25	2.45	2.68	2.90	3.00	3.10	2.75	2.45	2.52
1950-51	2.30	2.72	2.95	3.10	3.35	3.28	3.25	3.24	3.04	2.94	2.87	2.77	2.97
1951-52	2.80	2.90	2.35	2.90	2.90	2.88	2.82	2.92	3.17	3.22	3.25	2.98	2.97
1952-53	2.85	2.89	2.90	2.85	2.82	2.94	2.95	2.87	2.76	2.56	2.55	2.47	2.78
1953-54	2.57	2.83	2.99	3.03	3.17	3.49	3.80						

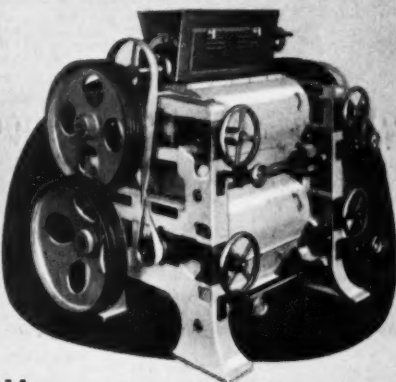
Distributed by Chicago Branch Market News Office, U. S. Department of Agriculture.

AUGUST, 1954

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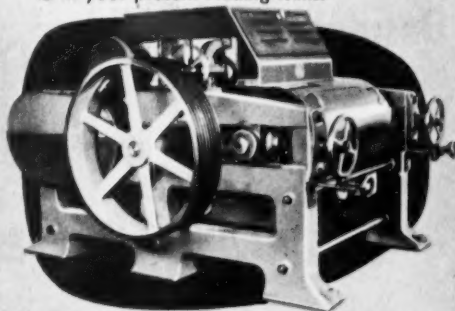
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**FACTORY USE VEGETABLE OILS** for April and May as reported by Bureau of the Census. (1,000 lbs.)

**PRIMARY MATERIALS: FACTORY PRODUCTION AND CONSUMPTION, AND FACTORY AND WAREHOUSE STOCKS, MAY 1954-APRIL 1954**

	Factory production		Factory consumption		Factory and warehouse stocks	
	May 1954	April 1954	May 1954	April 1954	May 31 1954	Apr. 30 1954
Cottonseed, crude .....	124,212	161,955	163,177	191,274	84,728	129,706
Cottonseed, refined .....	151,578	178,107	174,462	176,259	1,061,214	*1,147,144
Peanut, crude** .....	6,963	8,895	5,771	4,819	11,545	9,623
Peanut, refined .....	5,410	4,600	3,174	3,137	5,319	4,512
Soybean, crude .....	193,327	194,526	201,149	191,443	127,599	142,206
Soybean, refined .....	186,097	180,911	182,924	*187,113	103,331	*98,429
Coconut, crude .....	35,481	35,863	46,730	50,243	143,216	145,345
Coconut, refined .....	30,122	32,939	27,072	30,306	10,437	8,884
Vegetable foots (100% basis) .....	21,342	21,516	14,659	13,306	47,012	47,678

\*Revised. †Includes 909 million pounds of refined cottonseed oil reported by respondents to the Census Bureau as owned by Commodity Credit Corp. The comparable Apr. 30, 1954, figure is 943 million pounds. As of May 31, CCC reported that it had removed from inventory and put in an "in-transit position to other storage" about 129 million pounds of refined cottonseed oil of which it is estimated that approximately 40 million pounds have not been accounted for in respondent reports to the Census Bureau. It is believed that unreported stocks in-transit have recently been considerably larger than usual. The amount of in-transit stocks will be kept under continued review by the Census Bureau and CCC. \*\*Data on production and stocks held at crude oil mill locations collected by Agricultural Marketing Service, U. S. Department of Agriculture. ‡Data are on a commercial stocks basis, and do not include figures for stock piles of strategic oils.

## FACTORY CONSUMPTION OF ANIMAL AND VEGETABLE FATS AND OILS, BY USES, DURING MAY 1954

	Edible products			Inedible Products				
	Shortening	Margarine	Other edible	Soap	Chemicals	Paints & varnish	Lubricants & greases	Other inedible
Cottonseed, refined .....	35,558	3,900	2,101	.....	132	.....	.....	53
Soybean, crude .....	.....	.....	.....	46	.....	258	.....	756
Soybean, refined .....	39,636	4,747	9,971	.....	.....	6,282	12	6,350
Vegetable foots .....	.....	.....	.....	2,739	.....	113	.....	566
Hydrogenated cottonseed oil, edible.....	32,864	29,525	.....	.....	.....	.....	.....	.....
Hydrogenated soybean oil, edible.....	39,491	41,523	1,467	.....	.....	.....	.....	.....
Fatty acid stock .....	.....	.....	.....	654	.....	69	.....	289

**STOCKS ON FARMS.** Stocks of soybeans on farms July 1 are estimated at 3.6 million bushels. This is equivalent to only 1.4 percent of the 1953 production and the lowest July 1 farm stocks in the 12 years of record. The 10-year average for the date is 8.2 million bushels, while last year a record 20.4 million bushels were still on farms. Disappearance from farms for the period Apr. 1 to July 1 amounted to 33.1 million bushels, much of which was used for seed to plant the 1954 crop. This compares with 39.3 million bushels disappearance for the April-June quarter last year and the average of 33.6 million bushels.

Farm stocks are at an extremely low level mainly because of the relatively favorable prices for soybeans during the last several months. Also, because of early plantings this year, there was little need to hold seed on farms for planting after July 1. Of the total farm stocks, nearly nine-tenths are in the North Central area. Illinois, Ohio, Iowa and Missouri each have more than a half-million bushels still on farms.

## SOYBEAN STOCKS ON FARMS

State	Av. 1943-52	1953	1954	State	Av. 1943-52	1953	1954
N. Y. ....	32	9	8	Md. ....	43	40	27
N. J. ....	31	33	12	Va. ....	93	59	67
Pa. ....	46	23	23	W. Va. ....	1	1	—
Ohio ....	926	2,068	531	N. C. ....	178	95	57
Ind. ....	1,029	2,560	369	S. C. ....	30	56	29
Ill. ....	2,328	4,905	769	Ga. ....	3	8	12
Mich. ....	130	87	10	Fla. ....	—	2	2
Wis. ....	39	73	49	Ky. ....	85	60	12
Minn. ....	406	2,194	277	Tenn. ....	34	72	20
Iowa ....	1,890	5,837	515	Ala. ....	14	17	9
Mo. ....	523	655	511	Miss. ....	60	123	30
N. Dak. ....	8	7	8	Ark. ....	109	139	73
S. Dak. ....	30	102	47	La. ....	15	6	3
Nebr. ....	22	(1)	10	Okla. ....	4	17	12
Kans. ....	82	110	60	U. S. ....	8,243	20,393	3,566
Del. ....	52	35	16				

(1) Less than 500 bushels. Crop reporting board of USDA's Agricultural Marketing Service.

**SOYBEAN DIGEST**

**FUTURES TRADING.** The volume of futures trading in all soybean products increased markedly in the fiscal year ended June 30, and the volume in soybeans, over 5 billion bushels, was the largest on record, according to the report by J. M. Mehl, administrator of the Commodity Exchange Authority.

Trading in cottonseed oil dropped sharply from the preceding year.

**VOLUME OF FUTURES TRADING ON ALL CONTRACT MARKETS COMBINED, BY COMMODITIES, FISCAL YEARS ENDED JUNE 30, 1953, AND JUNE 30, 1954**

Commodity	Unit	1953	1954	Percent of increase or decrease
Soybeans	1,000 bu.	3,346,329	5,147,957	+ 53.8
Cottonseed Oil	1,000 lbs.	3,050,280	871,680	- 71.4
Soybean Oil	1,000 lbs.	3,048,720	4,711,260	+ 54.5
Lard	1,000 lbs.	1,414,080	2,861,920	+102.4
Cottonseed Meal	tons	98,200	216,300	+120.3
Soybean Meal	tons	1,837,900	4,054,000	+120.6

**VOLUME OF FUTURES TRADING BY CONTRACT MARKETS, BY COMMODITIES, FISCAL YEARS ENDED JUNE 30, 1953, AND JUNE 30, 1954**

Commodity	Unit	1953	1954	Percent of increase or decrease
<b>CHICAGO BOARD OF TRADE</b>				
Soybeans	1,000 bu.	3,251,226	5,062,125	+ 54.4
Soybean Oil	1,000 lbs.	2,676,000	4,286,700	+ 60.2
Lard	1,000 lbs.	1,414,060	2,861,920	+102.4
Soybean Meal	tons	806,200	2,356,400	+192.3
<b>CHICAGO OPEN BOARD OF TRADE</b>				
Soybeans	1,000 bu.	55,103	59,682	+ 8.3
<b>NEW ORLEANS COTTON EXCHANGE</b>				
Cottonseed Oil	1,000 lbs.	540	0	-100.0
<b>NEW YORK PRODUCE EXCHANGE</b>				
Cottonseed Oil	1,000 lbs.	3,049,740	871,680	- 71.4
Soybean Oil	1,000 lbs.	372,720	424,560	+ 13.9
<b>MEMPHIS BOARD OF TRADE CLEARING ASSOCIATION</b>				
Cottonseed Meal	tons	98,200	216,300	+120.3
Soybean Meal	tons	1,031,700	1,697,600	+ 64.5
Soybeans	1,000 bu.		6,170	

**PROTEIN PRICES.** Retail protein price report for July 15, by Protein Economics and Research Council.

Food	Retail Price(1)	% Protein(2)	Price per lb. of protein(3) Paid by Consumer
Beef—			
Chuck Roast	\$0.31 lb.	16.2	\$2.89 -18(5)
Hamburger	0.42 lb.	16.1	2.90
Round Steak	0.87 lb.	17.6	4.77 +11(5)
Cheese—			
Cottage	0.24 12 oz. box	19.5	1.83
Cured Cheddar	0.65 lb.	25.1	2.19
Chicken—			
Frier, ready to cook	0.53 lb.	15.2	3.37
Eggs, Fresh	0.50 doz.	11.4	2.80 +6(5)
Fish—			
Haddock, Frozen Fillet	0.30 lb.	18.2	2.74 +10(5)
Salmon, Canned Pink	0.53 lb.	20.5	2.49
Lamb, Leg	0.70 lb.	15.0	4.38
Milk—			
Evaporated	0.14 14 <sup>1</sup> / <sub>2</sub> oz. can	7.0	1.79
Fresh, Whole	0.22 qt.	3.5	2.45
Non-fat, Dry	0.40 lb.	35.6	0.97
Pork—			
Chops	0.87 lb.	13.3	6.07
Ham, Whole	0.72 lb.	14.7	4.28 +9(5)
Soy Flour (6)	0.20 lb.	50.0	0.40

(1) Estimated retail prices reasonably representative of current U. S. prices on basis of spot checks and price trends. Must be adjusted to meet local conditions. (2) Percent protein, Composition of Foods, U. S. Dept. of Agriculture, Agriculture Handbook No. 8. Foods may vary appreciably from these values. (3) In estimating the price per lb. of protein in the above foods, all carbohydrates are arbitrarily calculated at 10c per lb. and fats at 30c per lb. The dollar value of vitamins, minerals and water is considered negligible on a pure chemical market basis. The balance is charged against protein. (5) Price change of protein from last month in cents. (6) Reported by soy flour processors, not by PERC.

**SHORTENING.** Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., in pounds.

June 26	4,560,569
July 3	6,088,590
July 10	4,331,662
July 17	5,262,063

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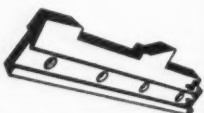
## SOYBEAN AND COTTONSEED PRODUCTS

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## PROCESSING OPERATIONS. Reported by Bureau of the Census for May and June.

### PRIMARY PRODUCTS, EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS, AND STOCKS, JUNE 1954 - MAY 1954

Products	Unit of measure	Production		Shipments and transfers		End of month stocks	
		June 1954	May 1954	June 1954	May 1954	June 30 1954	May 31 1954
Soybean:							
Cake and meal.....	tons	364,525	416,328	375,028	421,187	166,871	177,374
Leithin .....	1000 lb.	2,018	2,222	2,245	2,020	2,837	3,064
Edible soy flour, full fat .....	tons	305	(1)	322	(1)	235	252
Edible soy flour, other .....	tons	4,906	4,666	4,737	4,498	1,235	1,066
Industrial soy flour .....	tons	2,516	3,190	2,411	(1)	(1)	(1)

(1) Not shown to avoid disclosure of figures for individual companies.

### SOYBEANS: RECEIPTS, CRUSHINGS, AND STOCKS AT OIL MILLS, BY STATES, JUNE 1954 - MAY 1954 (Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	June 1954	May 1954	June 1954	May 1954	June 30 1954	May 31 1954
U. S. ....	197,424	233,737	463,095	526,380	737,953	1,003,624
Arkansas .....	(1)	(1)	(1)	(1)	5,062	9,814
Illinois .....	48,908	74,761	184,931	202,502	323,828	459,851
Indiana .....	31,632	32,466	40,432	49,989	67,960	76,760
Iowa .....	41,881	63,553	94,897	104,657	147,385	200,401
Kansas .....	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky .....	(1)	(1)	(1)	(1)	(1)	(1)
Minnesota .....	32,333	29,308	35,536	37,541	13,367	16,570
Mississippi .....	814	(1)	3,200	(1)	918	3,304
Missouri .....	(1)	(1)	(1)	(1)	20,962	23,526
Nebraska .....	(1)	(1)	(1)	(1)	(1)	(1)
North Carolina .....	(1)	(1)	(1)	(1)	(1)	(1)
Ohio .....	22,265	13,903	50,011	57,295	96,644	124,390
All other .....	19,591	19,744	54,068	74,396	61,827	89,008

(1) Included in "All other" to avoid disclosure of figures for individual companies.

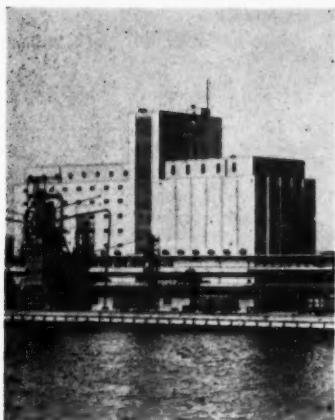
### SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, JUNE 1954 - MAY 1954

State	Crude oil (thousand pounds)				Cake and meal (tons)			
	June 1954	May 1954	June 30 1954	May 31 1954	June 1954	May 1954	June 30 1954	May 31 1954
U. S. ....	171,614	193,327	37,007	44,661	364,525	416,328	166,871	177,374
Arkansas .....	(1)	(1)	(1)	(1)	(1)	(1)	461	(1)
Illinois .....	69,196	75,262	15,924	15,069	137,522	153,868	69,790	64,841
Indiana .....	15,164	18,546	866	6,352	33,855	40,466	52,742	62,275
Iowa .....	35,585	39,056	7,614	8,665	77,661	85,856	16,536	20,388
Kansas .....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky .....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Minnesota .....	12,792	13,672	4,839	3,068	27,903	31,448	(1)	(1)
Mississippi .....	1,237	(1)	(1)	681	2,978	(1)	(1)	997
Missouri .....	(1)	(1)	679	2,474	(1)	(1)	(1)	3,502
Nebraska .....	(1)	(1)	300	653	(1)	(1)	(1)	(1)
N. Carolina .....	(1)	(1)	(1)	(1)	(1)	(1)	501	682
Ohio .....	18,250	20,050	4,039	3,656	41,239	45,088	5,078	4,145
All other .....	19,389	26,741	2,746	4,023	43,367	59,602	21,763	20,544

(1) Included in "All other" to avoid disclosure of figures for individual companies.

## STOCKS. Agricultural Marketing Service's commercial grain stocks reports. (1,000 bu.)

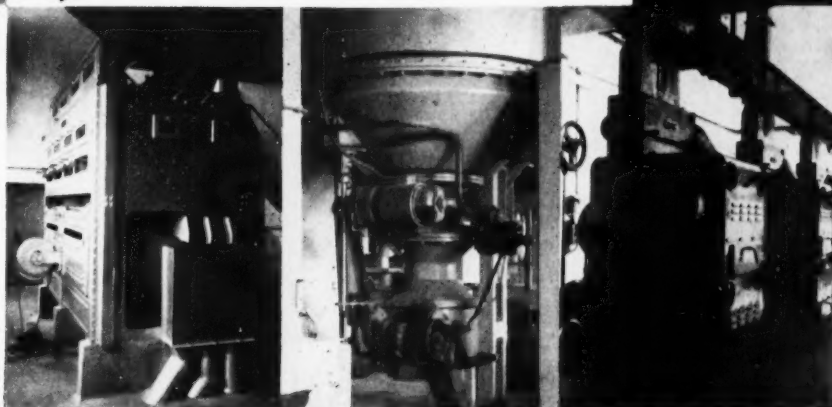
U. S. Soybeans in Store and Afloat at Domestic Markets				
	June 29	July 6	July 13	July 20
Atlantic Coast .....	242	123	125	128
Gulf Coast .....	679	331	276	216
Northwestern and Upper Lake .....	89	80	80	80
Lower Lake .....	2,873	2,827	2,902	2,812
East Central .....	100	24	24	23
West Central, Southwestern & Western .....	1,611	1,188	1,111	1,004
Total current week .....	5,594	4,573	4,518	4,268
Total year ago .....	3,821	3,245	3,065	3,000
U. S. Soybeans in Store and Afloat at Canadian Markets				
Total current week .....	0	0	0	0
Total year ago .....	0	94	71	18
Total North American Commercial Soybean Stocks				
Current week .....	5,594	4,573	4,518	4,268
Year ago .....	3,821	3,339	3,156	3,018



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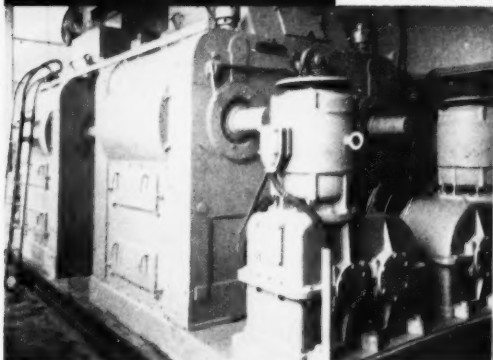
## ROLLER MILLS

Crushers, Cracking Mills, Flaking Mills, Cake Crushers, Meal Grinders, Flour Mills.

## BUHLER BROTHERS, INC.

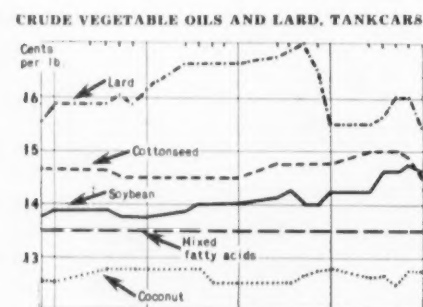
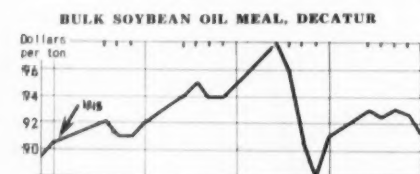
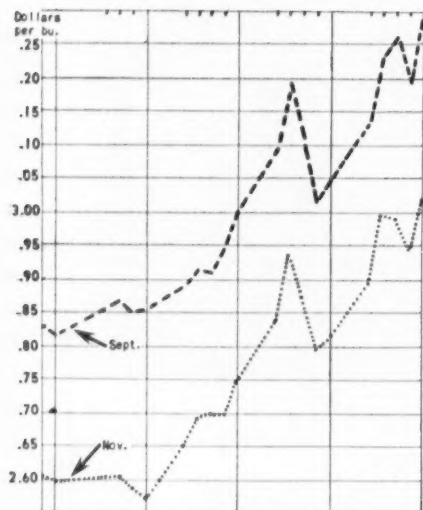
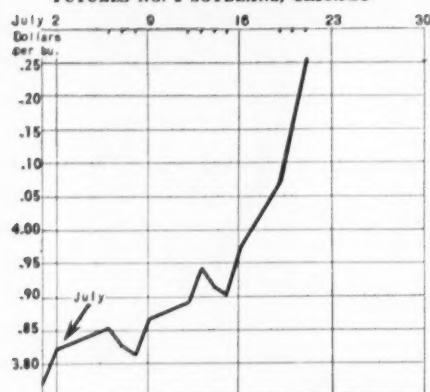
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## DAILY MARKET PRICES

FUTURES NO. 2 SOYBEANS, CHICAGO



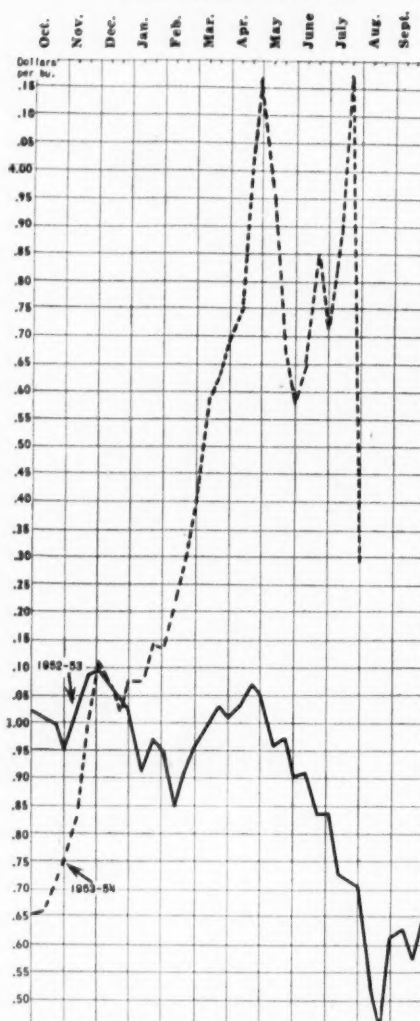
## July Markets

**J**ULY WAS one of the most erratic months in years so far as the markets were concerned.

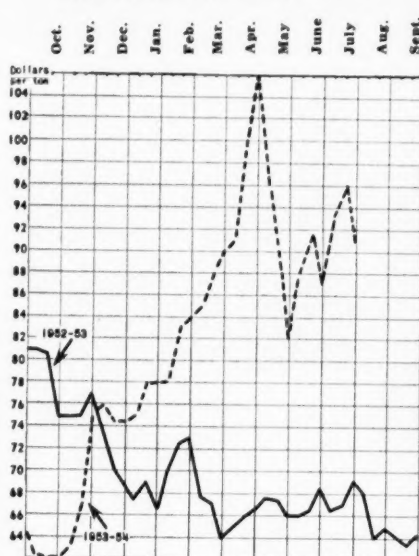
Weather was the prevailing influence and new crop soybeans were

## TRENDS AT A GLANCE

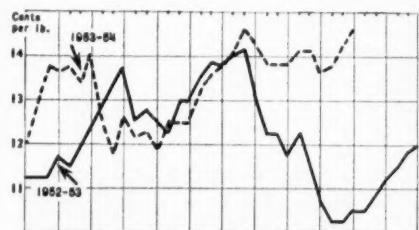
NEAR FUTURES SOYBEANS



BULK SOYBEAN OIL MEAL, DECATUR



CRUDE SOYBEAN OIL



extremely sensitive to changes in outlook. Markets pushed higher as the drought deepened and observers tentatively pared their estimate of the 1954 U. S. crop. But markets plunged after every general rain. And soybean meal and oil bounced up and down along with beans.

Both July and new crop soybeans made sharp gains during the month as it became apparent that the few remaining old crop beans were in strong hands. At the time the July option expired the market experienced one of its wildest actions in some years, due mainly to adverse weather reports.

### Bullish influences:

1—USDA's farm stocks report showing 3 million bushels remaining on farms compared with 20 million bushels a year earlier.

2—The touchy Chinese situation.

3—The visible supplies of soybean

and cottonseed oils showed an impressive decline for the month of June.

4—Export outlook. It was reported that 250,000 bushels of old crop beans would be shipped from Chicago to Canada. Denmark reportedly bought 4,000 tons of new crop beans.

Bearish influences included:

1—Sluggish demand for end products of both oil and meal. Demand for margarine and vegetable shortening was seasonally off. When soybean oil meal prices rose buyers turned to competing products.

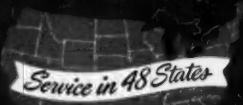
2—Government sales of dried milk. Cumulative sales for feed July 16 were reported at 479,396,923 pounds by Merrill Lynch, Pierce, Fenner & Beane.

New soybean oil established new high contract prices on all months in late July. But refiners remained cautious despite strength in soybeans as finished business continued to lag.

**SOAPSTOCKS.** Acid soybean soapstocks delivered Midwest opened and closed the month at 7¼ cents a pound, and raw soybean soapstocks remained at 3.62 cents.

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### Skellysolve for Animal and Vegetable Oil Extraction

**SKELLYSOLVE-B.** Making edible oils and meals from soybeans, corn germs, flaxseed, peanuts, cottonseed and the like. Closed cup flash point about 20°F.

**SKELLYSOLVE-C.** Making both edible and inedible oils and meals, particularly where lower volatility than that of Skellysolve-B is desired because of warm condenser water. Closed cup flash point about 13°F.

**SKELLYSOLVE-D.** Quality solvent at competitive prices. For degreasing meat scraps, extracting oil-saturated fuller's earth, general extraction uses. Closed cup flash point about 3°F.

**SKELLYSOLVE-F.** Extracting cottonseed meals and other products in laboratory analytical work. Originally made to conform to A.O.C.S. specifications for petroleum ether, and for pharmaceutical extractions, where finest quality solvent is desired. Closed cup flash point about 50°F.

**SKELLYSOLVE-H.** Making edible and inedible oils and meals where greater volatility is desired than that of Skellysolve C or D. Closed cup flash point about 20°F.

**"Doc" MacGEE says:** The word I'm thinking of is "parfait," which of course means perfect, without a flaw. And if perfection in solvents has a strong bearing on the perfection of your product, you'll do well to look into Skellysolve for all your solvent requirements.

**Perfection** is a long time habit with the people who produce Skellysolve—a habit that stems from the strictest of laboratory controls that check every step of the manufacturing processes. As a result, every batch checks perfectly with respect to sweet odor, low end points, a minimum of excessively volatile compounds and an exceptionally low

level of unsaturates and pyrogenic decomposition products.

**Uniformity** is a fetish of the men who make Skellysolve. Batch after batch is "right on the button" for boiling ranges, low toxicity and sulphur content. What's more, we're equally proud of Skellysolve's unsurpassed dependability of supply—undaunted for almost a quarter of a century, regardless of wars, weather and even floods!

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